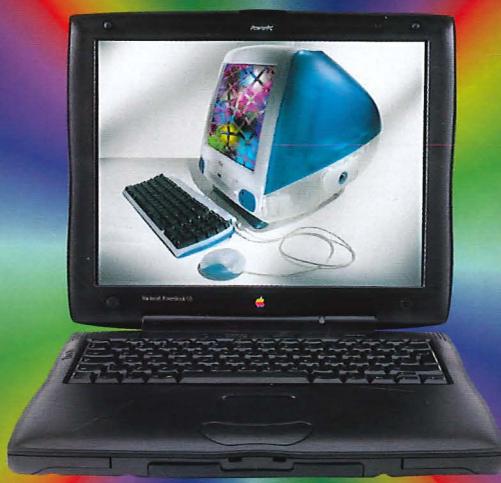


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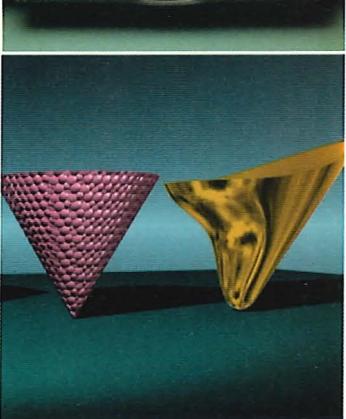
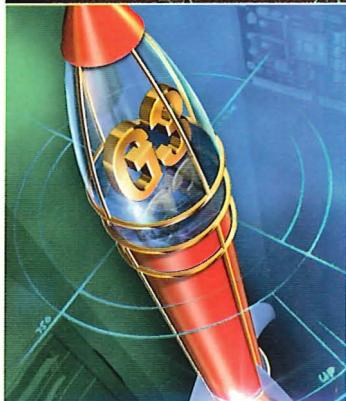
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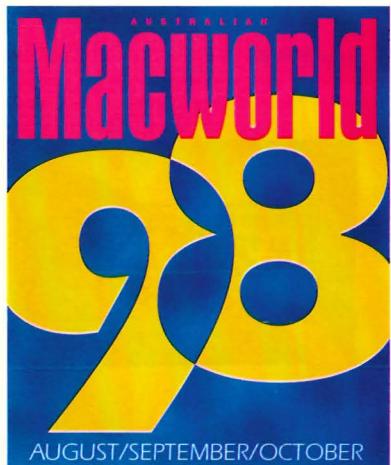
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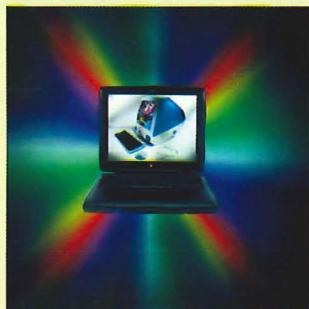
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by David Iacono.
Image manipulation
by Tim McClare.

EDITORIALLY SPEAKING

The brand is it

On the boundary line of Adelaide's Football Park is a single white shape—Nike's 'swoosh'—repeated four times on a black background. The same logo can be seen on the collar of every Port Adelaide player's guernsey, looking like part of the top's design rather than a separate stitched-on advertisement.

The widespread use of this symbol—without text, without any explanation whatsoever—is both a cause and a demonstration of Nike's brand strength. Some buyers are swayed by anti-shock soles and comparative prices, others want to know more about the company's international labour practices, but all recognise a good-looking footy boot. Somehow, when sports shoppers ask themselves "will I or won't I?", that swoosh on the side of the boot says "just do it".

In 1996 and 1997, when things started going seriously awry with Apple Computer's products and business strategies, some of the polish came off the company's long-neglected brand. The result? A decline in sales, profitability and market share.

This negative brand-image even spread to fans of Apple products. Can you believe that Newton developers were ecstatic last year when Apple decided to take its logo off the MessagePad? The decision was reversed, and so it should have been. Fixing the brand is harder than simply burying it, but the former is the better long-term strategy for Apple. No multinational can prosper in the information age without a strong and favourable brand-image.

The first step in resurrecting the Apple brand was returning the company to profitability, which was achieved late last year. In the same period, Apple released a striking brand-oriented marketing campaign: Think Different. This catch-cry was not about Apple's products, it was about its brand. As soon as Apple's brand had regained some of its former stature, the company launched a string of aggressive product-oriented television advertisements featuring a Pentium II processor strapped to a snail's back, a burning Intel 'bunny person' (one of the dust-suited people who work in chip plants), and a streamroller crushing Pentium-based laptops. They have been very effective, as Apple's rising US market share shows. However, they would have been far less effective had they been launched a year ago, when Apple's brand had not returned to its current strength.

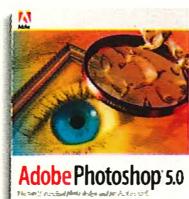
It's not yet clear whether Australians will see the 'burning bunny' ads (the original Think Different ad was screened in Australian cinemas but not on television). However, no part of the world will escape Apple's latest and strongest brand-building initiatives: a revamped logo, and the return of great industrial design.

Look out for the 'Bondi blue' Apple logo on the iMac (see photo, page 31), and the over-sized 'crystal white' logo on the new PowerBook G3 Series (see photo, page 66). They're big, they're bold and they're bloody hard to hide. They also lack Apple's traditional six coloured stripes, because it's the shape alone that Apple is trying to emphasise, to make as recognisable as Nike's swoosh.

Take another look at the iMac and PowerBook G3 Series, this time in our cover photo. Apple's logo isn't the only shape the company has been working on. These products are designed to impress. They don't just offer impressive performance for their price—their appearance and texture create product envy. Like a strong brand, they distinguish Apple from the crowd, encouraging consumers to choose a PowerBook or iMac even before they've thought about choosing Macintosh. And that's got to be a good thing for the platform.

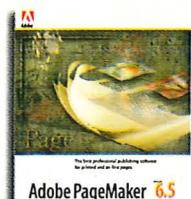
Steven Noble,
Editor.

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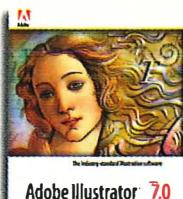
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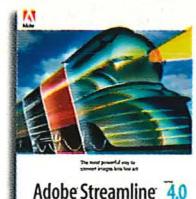


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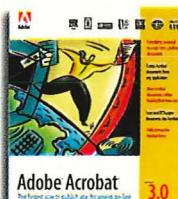


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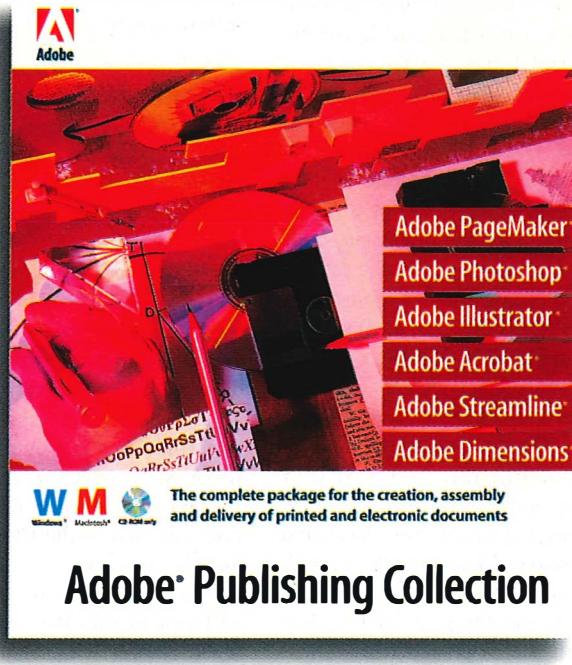
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Australian Macworld
is a publication of
Niche Media Pty Ltd
ACN 064 613 529

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PO Box 2135, St Kilda, Vic 3182

Digital Prepress/Printed by
Hannanprint Victoria 03 9213 3111

ISSN 1329-9484

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MailBox

Itching for an iMac

Contrary to the famous Chinese curse ('may you live in interesting times'), I'm glad that so much is happening in the Mac universe. Carbon sounds like a smart OS strategy, and I want an iMac so bad I can taste it.

Regarding the iMac, let me state for the record that I exemplify one of the key demographics that Apple is after with this product. As a cash-strapped student, I'm waiting for the right machine to come at the right price before I upgrade my vintage IIci. With that in mind, listen up: I don't care about floppy disks! Many commentators have concluded that the iMac's lack of a floppy drive will be seen as a drawback by the market. This sample of one says otherwise.

Andrew Westcombe
Blaxland, NSW

What price iMac?

I have been urging heaps of friends and clients to hang in there—the iMac will be here soon, I insisted, and it will be cheap! I guesstimated for them that with a \$US1299 price tag, it should sell here for less than \$AU2000, the exchange rate pending. They all said that at that price, they would wait. Be damned if I am now going to tell them that they will have to fork over \$AU2500, as reported in the June 1998 issue of *Australian Macworld*. I am going to suggest that they buy from Cyberian Outpost or the like instead.

Even with the crappy exchange rate and a \$AU75 shipping charge, there are a few facts that Apple Australia should consider: I bought a PowerBook 1400 CD-ROM module from Cyberian Outpost for less than half the price asked by Apple Australia. And, I have ordered a Newer Technology G3 upgrade, a Kiss solar panel and a Book-Endz for my 1400 for less than the ex-tax cost of one G3 upgrade from Apple Australia.

Don't get me wrong—I am one of the biggest Apple advocates I know. But, I don't want to hear lame excuses about exchange rates and hidden costs; that's just more fodder for the anti-Mac press. Moreover, I don't believe that PC makers are immune to such factors. I just want to be able to show people that they can get an Apple product for the same price as a comparable Wintel 'solution'. With Steve Jobs back at the helm, that

day may soon come, but in the meantime we shouldn't have to pay more than US prices.

James MM Rolevink
Sefton Park, SA

Ed: James, we forwarded your letter to Bill Harrington of Apple Computer Australia, who provided us with the following reply:

While Apple Computer Australia aims to provide competitively priced products, there are some factors beyond our control that make the recommended retail price appear higher here than in the US.

In Australia, the sales tax rate applied to computer hardware is 22 percent and this amount is included in the RRP. Prices quoted in the US do not include sales tax.

Another factor is the exchange rate for the Australian dollar, which at the moment is hovering around \$US0.62 and which is making all imports—including our computers—relatively more expensive.

The prices quoted from the US are usually street prices. Street prices in Australia are substantially lower than RRP.

In addition, the iMac product sold in Australia costs more to build than the product sold in the US. Physical product differences include the CRT, which has to be built specifically for the southern hemisphere. Not to do so would result in an unacceptable degradation in display quality.

The built-in modem used in Australia is physically different

to the US model too. A modem which meets Austel approval costs more to manufacture than modems that comply with US requirements.

The better price comparison that potential buyers should look at is the price of alternative products from other brand name manufacturers such as Compaq, IBM and Hewlett Packard.

The iMac can outperform a 400 MHz Pentium II. Its built-in display offers exceptional quality with refresh rates over 100Hz. It includes built-in 100BaseT Ethernet and the latest USB I/O as well as a 33.6Kbps modem. Bundled software includes AppleWorks, FileMaker, Internet Explorer and games. We believe that with this more appropriate comparison, the iMac is very good value indeed.

Ed: After this exchange, the Australian dollar fell further, and Apple increased its estimated iMac price to \$2800.



Letters to the editor
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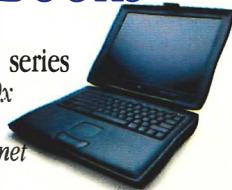
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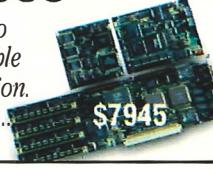
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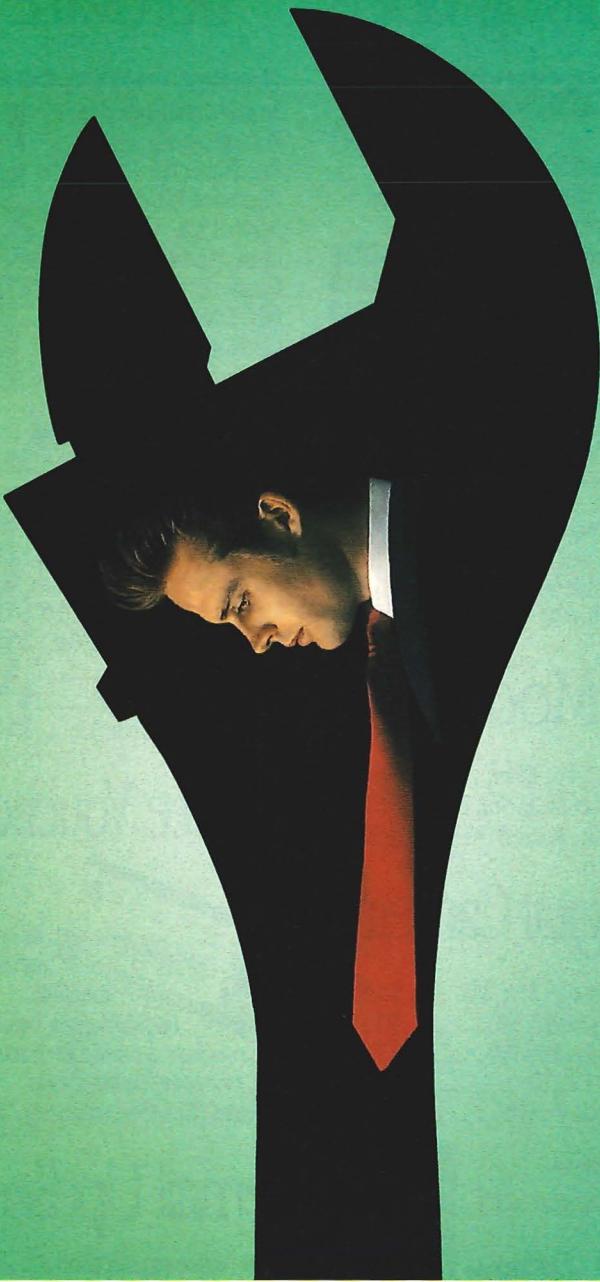
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MacNews

BUSINESS

Apple Australia to sell online

Apple Computer's Singapore factory, which services the Asia Pacific region, is moving towards a build-to-order (BTO) model, and Apple Computer Australia will sell these custom-configured Macs through an online store ('Apple Store') in addition to its retail channel, according to the company.

Apple Computer Australia expects to launch Apple Store early next year or late this year, said Di Ryall, managing director of Apple Computer Australia. BTO, which will let customers order Macs in any configuration they wish, will be a feature of Apple Store, and a pre-condition of its launch. BTO will also be offered through the current retail channel, perhaps before Apple Store is launched.

Ryall said that east coast retailers should receive BTO systems within four days of placing an order. In the longer term, Apple Computer Australia hopes to take advantage of the fact that Singapore is closer to Perth than Sydney, she said.

The rapid manufacturing system will also help Apple more swiftly release new technologies in Australia, said Ryall. This would include faster

chips and new options such as DVD drives and Firewire cards. It will not further reduce the ratio between US and Australian prices, said Ryall, because the company addressed this issue last year, and "at the moment—if you do your maths, including the sales tax—you'll find there is something like five- to eight-percent difference."

Australia's Apple Store will accord with Apple's international model <store.apple.com>, which has been successful in the US, but slower to gain momentum in the UK. This means that all models other than the iMac will be custom-configurable, Ryall said. Australia will take its lead from the US on whether or not to sell third-party product online.

Apple Computer Australia has consulted with its retail channel partners, and they are comfortable with its plans to bring Apple Store to Australia, Ryall said. Apple Store would be treated as a separate internal channel partner, however, and retail outlets would receive no revenue from online sales. She said the US experience has shown that many customers use Apple Store to price a custom-configured system, but they still prefer to order that system

through a retail outlet. Heather Bullot, managing director of Sydney-based Kurrawood Computers, said she expected Apple Store to do very well in Australia, because of the "tyranny of distance", and this country's relative shortage of Macintosh retail outlets.

Although a BTO system would reduce the need for Australian warehousing, Ryall said Apple Computer Australia had no plans to vacate its spacious and architectural-award-winning premises in Frenchs Forest, Sydney.

— Steven Noble

Build-to-order options as they are currently offered through the US Apple Store.

The Apple Store

Build to Order

Power Macintosh G3 Minitower

Standard features include:

- 1.4GHz PowerPC G3
- 1.25GB of L2 cache
- 1.4GHz PowerPC G3 Processor
- 24x8x16 (max) ATAPI CD-ROM Drives
- 64MB RAM (24x16, 112x16, 170x16)
- 3 PCI 2.1-compliant 128-bit slots
- Built-in ATI RADEON 84+8MB graphics and multimedia
- Mac OS 8.1 installed
- Mac OS 8 installed

Configurable Options

Select from the following options to complete your configuration.

Processor

266MHz PowerPC G3

With a faster processor, your computer carries out complex tasks more quickly.

Memory

64MB SDRAM + 1 DIMM

The more memory your computer has, the more applications you can run at the same time.

Store Menu Your Order Find Help The Apple Store

NEWS THIS ISSUE

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The Epson Color Proofer 5000 includes a stand-alone Fiery print server from EFI (pictured).

PRINTERS

Epson offers inkjet proofer

Epson is taking on the professional graphics market with the \$19,999 ex-tax Epson Color Proofer 5000, an A3+ inkjet printer that comes with a stand-alone Fiery PostScript server from EPS.

The printer is designed to replicate, as accurately as possible, what a page will look like when reproduced on a commercial press. Analog proofs, which are generated directly from the film used to make printing plates, offer the highest degree of accuracy, but they are costly and time-consuming to produce.

Digital proofers generally cannot match the accuracy of analog proofing systems, but they are cheaper than analog proofers and have the added advantage that they can work directly from digital data—there's no need to produce film on an imagesetter before you can see the proof.

Many designers who once might have produced multiple analog proofs for a project are now using inkjet or dye-sublimation printers for preliminary

proofs, turning to an analog system only when the job is ready to go on press. Some commercial printers are even accepting digital proofs as contract proofs—meaning the printer is contractually obligated to match the colours in the proof. In addition, digital proofers are the only choice if you're using one of the new filmless printing technologies, such as computer-to-plate systems or digital presses.

The Stylus Pro 5000's Fiery PostScript server features 32MB of RAM, a 2.1GB hard disk, and a high-speed 100/10BaseT network connection. The server can simultaneously spool, rasterise, and print PostScript files and includes a built-in web page that lets you control printer functions. The printer itself uses the same six-colour, Micro Piezo inkjet technology found in Epson's Stylus Photo, but the Stylus Pro 5000 boosts the resolution from 720 by 720dpi to 1440 by 720dpi.

Epson can be reached on 02 9903 9000, fax 02 9903 9177 and <www.epson.com.au>.

NEWS BRIEFS

MetaCreations has announced version 3.0 of Poser, its 2D and 3D human-figure posing and animation software.

According to MetaCreations, new features include **animal models**, a walk-animator, custom hand models, and mouth and facial controls. Poser 3 also ships with an updated user interface incorporating sophisticated lighting, camera and movement controls with fully customisable palettes. The product can import industry-standard BVH motion-capture files, along with sound files. It requires a PowerPC processor, System 7.5.1 or later, at least 24MB of application RAM (32MB or more is recommended), 80MB of free hard-disk space, and a CD-ROM drive.

The \$299 RRP **hybrid Macintosh and Windows CD-ROM** is distributed in Australia by Scholastic New Media: 02 4328 3555, fax 02 4329 9399, <www.scholastic.com.au>. The academic price is \$159 and upgrades are \$165.

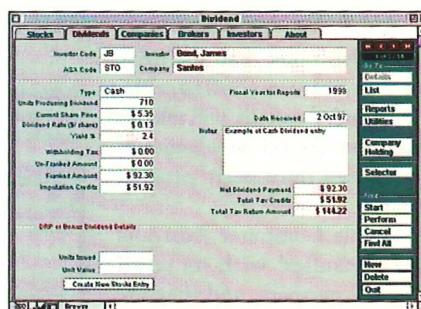
FINANCE

Share the wealth

Australian company Andromeda Educational Software has released version 2.0 of its share-management program, Mac ShareManager, which retails for \$225.

According to the company, Mac ShareManager offers a range of features to meet the basic needs of individual investors or portfolio managers. It is designed for Australian conditions, the company said.

The product records buy and sell prices and dividend entries, and generates profit/loss reports and year-end summaries, the company said. It deals with each stock parcel as a separate file



The Dividend screen from version 2.0 of Mac ShareManager, by Australian company Andromeda Educational Software.

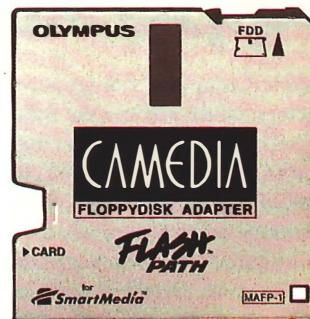
record, carrying all the statement details, purchase price and broker. The database can hold share and dividend information for a single or multiple investors, Andromeda said.

Andromeda can be reached on 03 9874 6511 and fax 03 9872 4110.

REMOVABLE STORAGE

The Flash is in the floppy

SmartMedia cards—stamp-size media also known as solid-state floppy-disk cards—offer a cost-effective means of storing images in digital cameras. But until now, you needed a PC Card adaptor and PC Card reader to copy the pictures directly to your Mac. Toshiba, which invented SmartMedia, has stepped into the breach with an adaptor that lets you use the cards in a standard floppy-disk drive.



The SmartCard-to-floppy disk adaptor made by Toshiba and sold by Olympic distributor R Gunz Photographic.

Toshiba's FlashPath consists of an adaptor that resembles a 3.5-inch floppy disk, along with software that allows use of the adaptor in most floppy drives.

Instead of the thin, rotating platter in conventional diskettes, FlashPath uses a fixed magnetic strip to transfer data from the SmartMedia card to the drive heads. You still hear the chunky sound as the heads move from track to track, but no more swish-swish sound from spinning floppies. Toshiba said it has tested the adaptor with a wide range of disk drives, including the drives used in Apple-branded Macintoshes and Mac clones.

R Gunz Photographic (02 9935 6600, fax 02 9935 6622) distributes the adaptor to Australian photographic retailers as an add-on for its Olympic digital cameras.

INTERNET

CyberStudio 3 & PE

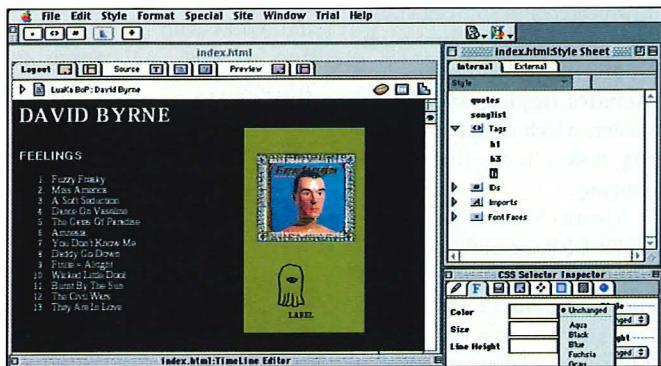
Australian Design and Drafting has announced the Australian availability of CyberStudio 3 Professional Edition and CyberStudio Personal Edition.

According to AD&D, the new \$275 RRP Personal Edition is more or less the former CyberStudio 2.0. GoLive is now targeting this version of its visual web-authoring package

at first-time web publishers.

New features in the \$899 RRP Professional Edition 3.0 include visual editing of cascading style sheets, fully dynamic web pages, enhanced site-management tools and ready-to-use editable JavaScript Actions.

AD&D can be reached on 02 9810 2422, fax 02 9810 0422, and www.adds.com.au.



CyberStudio 3 Professional Edition lets the user visually edit HTML incorporating cascading style sheets and other advanced features.

COMPETITIONS

The winners are...

Three *Australian Macworld* readers have each won a copy of Fontographer, courtesy of Macromedia www.macromedia.com, and Font Expert, courtesy of Techflow www.techflow.com.au.

The winners each wrote "I want to create my own fonts with Fontographer, and identify the fonts of others using Font Expert" in a typeface of their own invention. Using Fontographer, they'll be able to bring their creations to life, while Font Expert will give them a means of identifying other typefaces.

The winners were Stasio Ulaszyn, of Doonan, Queensland; Stuart Begg, of Clifton Hill, Victoria; and Vong Sy Sam, of Edensor Park, NSW.

I want to create my own fonts with Fontographer, and identify the fonts of others using Font Expert.

A colourful entry from Stuart Begg, of Clifton Hill, Victoria.

Upgrade Your LaserWriter IIINT to a IIg

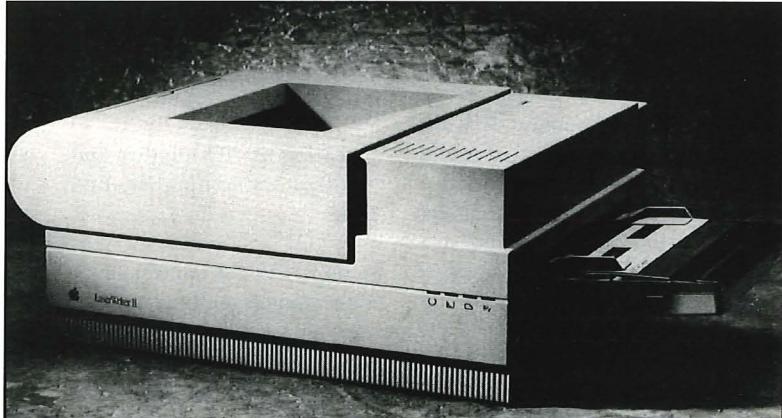
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3D MODELLING, RENDERING & ANIMATION



Version 2.5 of Strata's 3D modelling, rendering and animation program, StudioPro.

NEWS BRIEFS

Macromedia has released version 6.5 of Director, its multimedia-authoring tool. The upgrade adds support for QuickTime 3, Flash, PowerPoint and Java. Director 6.5 can import, rotate and mask QuickTime movies, according to the company, and the new version provides Lingo control of central QTVR properties. Director 6.5's **save-as-Java** feature lets developers create dynamic content for the web without requiring plug-ins on the client side, and it automatically converts cast elements and Lingo scripts to native Java types, Macromedia said.

Director 6 users can **upgrade to Director 6.5** for \$359 RRP. Registered users of Director 4 or 5 can upgrade to Director 6.5 for \$699 RRP. New users can purchase Director 6.5 for \$1695 RRP and Director 6.5 Multimedia Studio for \$1945 RRP. Director is distributed in Australia by Firmware Design (02 4721 7211, fax 02 4721 7215).

StudioPro updated

Australian Design and Drafting has announced the Australian availability of version 2.5 of Strata's 3D modelling, rendering and animation program, StudioPro.

This is the first StudioPro release that is available in Windows NT as well as Mac OS versions. New features include support for the OpenGL API, which is becoming popular amongst 3D professionals; enhancements to the product's animation support, including four types of path splines, individual frame visualisation, cycle back-and-forth attributes, continuation of paths, and time-varying polymesh; metaball and shape support in the Fountain tool; a faster scanline renderer which now supports soft shadows; collision detection with particle effects such as PixieDust and Fountains; and support for Postscript fonts, as well as TrueType.

The program is extensible, and—at the time of writing—

Strata's Power Module 1 comes free with StudioPro 2.5. This plug-in includes tools for deformation, smoothing, mirroring, hair, and 3D fire and smoke, as well as bones-based Inverse Kinematics. Further Strata plugins include Jiggle, which makes objects move and quiver; Springiness, which simulates environmental friction; Clouds II, which creates soft-edged, billowy clouds inside any object; Ripples II, which creates and animates ripples; and Model Master, which simplifies modelling tasks, according to the company.

Strata StudioPro 2.5 is \$2399 RRP, or \$899 to education users. Upgrades are \$499 from StudioPro 1.x, \$165 from 2.x, and less for education. Additional extension bundles are \$415 RRP each.

Australian Design and Drafting can be reached on 02 9810 2422, fax 02 9810 0422, and <www.adds.com.au>.

ANTI-VIRUS SOFTWARE

SAM

renamed, PowerPC native

Symantec has released Norton AntiVirus for Macintosh 5.0, the latest version of the product formerly known as SAM. The new version is PowerPC-native and works with HFS+ in addition to HFS, according to Symantec.

The company said NAV 5.0 automatically repairs incoming files; detects and removes unidentified macro viruses; works with internet downloads,



ILLUSTRATION: RICHARD DOWNS

SECURITY

Stop computer theft

Business Security Systems has announced the Australian introduction of the STOP (Security Tracking of Office Property) system.

Computer theft has cost Australian businesses more than \$200 million over the past three years, according to BSS. Of the 5000 computers stolen in NSW in 1996, only four percent were returned, the company said.

STOP discourages theft and assists in property recovery, by marking each computer with a unique ID number that is stored in an international database. According to BSS, the plate bearing the ID number can include a company logo, and features a warning message and an international toll-free number for verifying the owner's identity. Beneath the ID plate is an indelible chemical imprint reading "stolen equipment" and



Beneath the STOP plate is an indelible chemical imprint reading "stolen equipment".

repeating the ID number and toll-free phone number, BBS said.

STOP's schedule of fees starts at \$29 per unit for up to 49 computers, and falls to \$19 per unit for 500 or more computers. The world-wide STOP database can be found online at <www.intb.com>. Business Security Systems can be reached on 02 9287 9828 and fax 02 9261 8525.

email attachments, floppy disks, shared files and local networks; scans compressed files using Aladdin's StuffIt technology; and boots directly from the installation CD for emergency repair of infected system files. In addition, NAV users can subscribe to Symantec's LiveUpdate service, which automatically updates the product's virus-definition file via the internet.

The product includes a virus-definition file for the first known Macintosh 'worm'—AutoStart 9805. A worm is not a virus, but it is destructive.

NAV 5.0 requires a 68040 or faster processor, System 7.5 or later, at least 8MB of RAM and 10MB of free disk space. Users will also need an internet connection or modem to use LiveUpdate.

NAV for Mac 5.0 is \$99 RRP, and upgrades from SAM 4.5 are \$55. Symantec Australia can be reached on 02 9879 6577 and fax 02 9879 6805.

WINDOWS COMPATIBILITY

PC cards sold on price

Orange Micro has released its new OrangePC 620 series of Windows compatibility cards for Macintosh systems at what it is calling "a breakthrough price". The cards, which start at \$1709 RRP for a 200MHz Pentium with MMX and 16MB of RAM, are distributed by Symbiotic Australia, which can be reached on 03 9836 4482 and fax 03 9830 1823. The OrangePC is four-to-20 times faster than software emulation products and is not dependent on the speed of the host machine, according to Orange Micro. The new cards also feature version 3.1 of the OrangePC software application, which can show the Windows environment as a window in the Mac OS, and visa versa. ☀

TOUCHSCREENS

MicroTouch back on Mac

After several years of not upgrading its Macintosh products because of concerns about the financial health of Apple Computer, MicroTouch has released a new Macintosh version of its touch-screen technology that supports PowerPC systems and Mac OS 8.

MicroTouch's ClearTek touchscreen technology for Macintosh includes the ClearTek Sensor, an ADB controller, and TouchWare 3.3 software, which can accommodate data for multiple video resolutions.

The multimedia company A Step Beyond—based on the Gold Coast—has used Macintosh computers and ClearTek technology to build its Merlin the Wizard entertainment

kiosks. Greg Mirkin, director of A Step Beyond, said the company had installed 50 such kiosks throughout Australia and had begun exporting them to Asia and Europe.

MicroTouch Australia will fit its ClearTek sensor onto a customer's monitor: fitting a 14-inch screen costs \$1279 ex-tax; fitting a 21-inch screen costs \$1557. The company will also supply monitors that are prefitted with ClearTek. If customers opt for NEC models, they'll pay \$1789 and \$5389 respectively for 14- and 21-inch displays.

MicroTouch Australia can be reached on 1800 632 136, fax 03 9561 7393 and <www.microtouch.com.au>. ☀



One of the Merlin the Wizard entertainment kiosks, built using Macintosh and ClearTek technology.



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DIGITAL VIDEO

Studio supports Sony DV

The components of DV Studio 1394, along with a Sony digital-video camera (not included).



NEWS BRIEFS

FileMaker Inc has released FileMaker Pro 4.0 Developer Edition, and Sun Microsystems' Java software division has granted it **100-percent-pure-Java certification**.

The Developer Edition features an API for writing external functions that expand the core functionality of FileMaker Pro 4.0, the company said. By incorporating Java class libraries in this API, the Developer Edition provides access to FileMaker Pro databases across all operating systems supporting the Java platform, FileMaker Inc said. "This will be especially important as more developers are creating databases for company internet, intranet and extranet web sites," said Steve McManus, FileMaker Inc's general manager, Asia Pacific.

FileMaker Pro 4.0 Developer Edition should ship in the first week of July on a \$870 RRP hybrid Mac OS/Windows CD-ROM, the company said. FileMaker Inc can be reached on 1300 652 271 and <www.filemaker.com.au>.

Infinite Potential Technology has announced the Australian availability of DV Studio 1394, a digital-video-editing solution from the Germany-based company Octopos Systems.

DV Studio 1394 uses hardware encoding and decoding, which lets it deliver faster edits than Radius and Miro boards, according to IPT. The 14-inch PCI card includes Firewire in and out and YUV (component) out, the company said, along with other connectors. The board also includes

Sony's new DVBK-1 daughter-card, integrating support for Sony's new DV digital-video format, along with older industry standards. The system supports QuickTime 2.5 and 3, requires Mac OS 7.6.1 or later, and includes Adobe Premiere 4.x with a free upgrade to Premiere 5, IPT said. Other system requirements include a 604e or later PowerPC processor that is clocked at no less than 132MHz, and a SCSI hard disk capable of at least 3.6MBps.

The DV Studio is \$8790 RRP or \$7560 ex-tax, and Infinite Potential Technology can be reached on 02 9984 9000 and fax 02 9984 9100. ☀

VIRTUAL REALITY

IPIX guns for QTVR users

IPIX has set its sights on Apple's QuickTime VR technology, with the intention of making its own .ipx format the preferred platform for creating immersive environments.

Although QTVR has a huge headstart—Apple announced in May that three million Mac and Windows users had downloaded QuickTime 3.0, and the QuickTime plug-in is bundled with Netscape Navigator and Microsoft Internet Explorer—IPIX managing director Evan Jones said IPIX is gaining ground.

According to Jones, whose company sells IPIX kits, IPIX users can capture entire 360-by-360-degree spherical environments with audio in just two shots. Web authors can post IPIX environments as Java applets if they don't want to force surfers to install the free IPIX browser plug-in.

IPIX's IPIX kits consist of a digital camera, tripod, fish-eye lens and software. While the Photoshop and Director plug-ins are cross-platform, the Macintosh



IPIX managing director Evan Jones capturing half of a spherical image using a camera and fish-eye lens.

version of the builder software is not due until the fourth quarter of 1998, according to Evans. "Our Mac developers at the moment are using a PC to do the stitching, which is basically an automatic process that takes five or 10 minutes, and then do the creative work on the Mac itself," he said.

IPIX's first IPIX kit, based on the Olympus C-820L digital camera, is \$2855 ex-tax, or \$3770 RRP. A kit based on Kodak's DC200 is due this month, and SLR alternatives are available.

IPIX can be reached at 03 9533 64087, fax 03 9533 6328, or <www.ipix.com.au>. ☀

INTERNET

Sonic tunes net access

Sonic Systems has added Interpol and Bandit to its line-up of internet-access related devices for LAN managers.

Interpol can prevent internet users on a LAN from accessing web sites or newsgroups that are defined as objectionable by Microsystems Software's CyberNOT database, according to Sonic Systems. The firewall device can also guard against attacks from outside hackers. According to Sonic, one of Interpol's key advantages is its ease of use, as administrators control it from their own personal computers using their preferred web browsers. Interpol is \$4435



Interpol (above) and Bandit (top) are two new internet-access related devices from Sonic Systems.

RRP, or \$3636 ex-tax. This price includes a one-year subscription to CyberNOT updates.

Bandit aggregates up to three modem connections to create one high-speed internet connection of up to 345Kbps that can be shared by up to 2048 users on a network, according to Sonic Systems. Each of the three modems connected to Bandit requires its own dial-up account with an internet service provider. The device also includes a built-in DHCP server and four-port 10BaseT hub, and—like Interpol—Bandit is configured remotely using a web browser. The product is \$1351 RRP, or \$1108 ex-tax.

Sonic Systems products are distributed in Australia by Macsimise, which can be reached on 03 9521 4877, fax 03 9521 4977, and <www.macsimise.com.au>. ☀

SOFTWARE

Microsoft rewards piracy informers

Microsoft has launched an anti-piracy campaign in Victoria targeting the business sector. As part of the campaign, Microsoft is offering a \$5000 reward for information leading to successful legal action against a business using illegal or unauthorised Microsoft software.

Ralph Garbers, state manager for Microsoft Victoria, said that Microsoft is targeting businesses that deliberately install and use software without the appropriate licences.

"We recognise that many businesses inadvertently use unauthorised software because they lack the expert advice to manage their software assets," he said. "In such instances we

see our role as one of education and providing them with effective solutions to avoid using illegal software."

Ron Eckstrom, Microsoft's corporate attorney for the south Asia-Pacific region, estimated that companies using unlicensed software account for over half the total loss to Australia's software industry. "We want businesspeople to recognise that software piracy is no different from theft," he said. "And worse, many of them are running their daily operations on software that could corrupt their valuable data."

Microsoft is encouraging any member of the public to report any incidence of software piracy to its Anti-Piracy Hotline (1800 639 963). 

DIGITAL CAMERAS

Nikon releases CoolPix 600, 900 digital cams

Nikon has introduced the CoolPix 900, which offers megapixel resolution and 3x zoom capability for an RRP of \$1985. The camera stores images in JPEG format on CompactFlash cards; you can choose from three levels of compression.

Nikon has also introduced the CoolPix 600, a \$1195 digital camera that offers a maximum

1024-by-768-pixel resolution. The price includes a docking station with video-out and serial ports for connecting it to a Macintosh or Windows system.

Nikon products are distributed in Australia by Maxwell Optical Industries, which can be reached on 02 9390 0200, fax 02 9390 0201, and <www.maxwell.com.au>. 



Nikon's CoolPix 900, which joins the CoolPix 600 in Maxwell Optical Industries' range of Mac- and PC-compatible digital cameras.

PHOTOGRAPH: ARNOLD TIOSECO

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QuickClicks

MetaSynth 2.0

TONS GRAPHICS INTO SOUND

Somewhere outside the well-established genres in the audio world—MIDI sequencers, sampled-sound editors, and musical-notation programs—lies Arboretum Systems' MetaSynth 2.0. At its most basic level, this outrageous program lets you take any graphic image and 'convert' it into sound. The Macintosh-only MetaSynth is not only guaranteed to enrapture music pros but is also yet another reason to consider the Mac the premier audio-creation tool.

MetaSynth uses an image's brightness and colour information to generate musical notes. You can change how the image 'sounds' with a variety of built-in filters (softening, sharpening, and more); painting tools let you draw within MetaSynth. The program's many methods for converting images to sounds allow amazingly sophisticated special effects. For example, a pixel's colour determines the pixel's position in the stereo sound field (red is panned hard right, green hard left, yellow exactly in the middle).

MetaSynth's range of special effects and tools for manipulating images is so extensive that we can only scratch the surface here. The incredible real-time

basic waveform and procedural wave-table synthesisers are a virtual tutorial in sound generation: as you drag the wave shape around, you hear the effects of your actions in real time. You can use the resulting synthesised sound to control the audio generated by the visual image-processor. And then there are the real-time special effects, including a reverb that you manipulate using a mouse.

While MetaSynth lacks MIDI support of any kind, it can output mono or stereo AIFF or Sound Designer II files that you can then bring into a MIDI sequencer or other audio-editing program (such as Digidesign's Pro Tools). You can also open AIFF and Sound Designer II files in MetaSynth and apply dynamic processing effects and basic sample-editing functions. For example, you can synthesise a robot-like voice by importing a previously sampled human voice and using it to modulate a sound effect created in MetaSynth.

MetaSynth's negatives are few: a small bug in the Undo function, documentation that could be more extensive and better organised, and an interface that sometimes strays from Macintosh conventions.

If you're an audio enthusiast, you'll find yourself losing vast amounts of sleep exploring MetaSynth's endless sonic delights. Regardless of your level of audio expertise, MetaSynth will help you hear the intricacies of sound and motivate you to learn more about audio design. There's nothing else out there like it. 

Type:	Audio software
Rating:	 1/2
RRP:	\$449
Distributor:	Sound Devices
Telephone:	02 9283 2077
Faxsimile:	02 9283 1337
Reviewer:	David Biedny

RATING KEY

Outstanding	
Very Good	
Good	
Flawed	
Unacceptable	
Dangerous	

Short and sharp, QuickClicks are brief reviews of the latest products, evaluated by experienced users. Detailed product reviews are on page 65.



MetaSynth's interface takes over your screen with layers of overlapping function windows. Here, the Image Synth window displays graphics data to be converted into sound; the resulting waveforms appear in the background.

Barbie as Rapunzel

ROMANTIC FABLE WITH FAIRY-TALE ENDING

The classic tale of Rapunzel is presented here for modern girls, with Barbie in the starring role. She's trapped in the tower, thanks to the Wicked Witch, but Barbie's long hair comes to the rescue.

The children must play a role in this story too. We help Barbie find the handsome but fairly helpless prince after he is banished by the witch. Searching the kingdom, we trade trinkets for information, and work when necessary for extra leads. To earn ribbons and bread we decorate a wedding cake, then sort jewels and treasures to make our way across a river.

For Barbie fans there is the chance to dress her and add a few favourite accessories. Everything is pretty, pink or purple, and personalities are either black or white. In the end, of course, Barbie gets her prince and they live happily ever after.



Barbie stars as Rapunzel, the fair maiden who has been trapped in the tower by the Wicked Witch.

This program is a combination of interactive book, adventure and creativity program. The story is read aloud with the text on screen, although we can't click on the individual words. Finding the lost prince provides the adventure component, while the girls can exercise their

creativity by printing scenes or accessorising Barbie. How about the mauve dress with the lolly-pink necklace and a single rose to add a touch of romance? The graphics in this Barbie program are a little flat and the program is less innovative than the other Macintosh titles in the Barbie

series, yet it will still be appreciated by Barbie fans.

Barbie as Rapunzel is best used by fairly young Barbie fans (aged between four and seven years) as they will gain more from the simple activities of sorting objects and matching colours. They may, however, be a bit concerned by the nasty witch. Parents, on the other hand, may be a little concerned about Barbie's outlook on life, not to mention the instant romance and, er, fairy-tale ending. Was the prince really lost, I wonder, or was he hiding? ☺

Type:	Edutainment
Rating:	3 1/2
RRP:	\$49.95
Distributor:	Dataflow
Telephone:	02 9417 9700
Facsimile:	02 9417 9797
Reviewer:	Anne Glover

Anastasia

ADVENTURES WITH POKA AND BARTOK

Is Anastasia the long-lost Russian princess? Only we can prove her past and determine her destiny.

With the help of Anastasia's cute puppy Pooka, we search for clues in Paris and St Petersburg. We direct Pooka as he sniffs out the clues and sticks his nose in all corners of the old palace and every crevice on the train.

In each location we stumble across a bunch of cranky minions (creatures of the underworld), who are intent on stopping our progress. First, we are almost surrounded by toxic slime and must bounce on the rocks to escape sinking. Then, we have to squash minions before they squish us. We must complete each game we enter before we can continue with the adventure, but the kids did not complain. In fact, they deliberately returned to their favourites.

The four games are great



The cute puppy Pooka helps us search for clues about Anastasia's heritage in Anastasia: Adventures with Pooka and Bartok.

fun in their own right, and they also get the kids thinking. They are doses of arcade entertainment that break up the story and provide the kids with short rewards before they complete the full adventure.

Each part also unlocks another stage of Anastasia's

diary. Her diary is read aloud, keeping the players up-to-date with her progress and motivating them to move to the next location.

This is an adventure game for the whole family. It is captivating, compelling and very frustrating. At times we needed

to get a few more heads thinking, or we gave the game a miss for a while and came back later. Children of eight-to-12 years will enjoy the challenge on their own or with a bunch of friends.

Anastasia will be appreciated most by fans of the recently released movie of the same name, and by children who enjoy hide and seek, especially those who have the patience to search high and low for clues. Those who prefer more action and quicker results will spend more time fighting the minions than helping Anastasia. ☺

Type:	Edutainment
Rating:	3 1/2
RRP:	\$49.95
Distributor:	Electronic Arts
Telephone:	07 5528 0800
Facsimile:	07 5528 0500
Reviewer:	Anne Glover

X-Men

THE RAVAGES OF APOCALYPSE

My favourite X-Men were always the tough, acrobatic Beast and the rebellious Wolverine, with his supercool extensible claws. But after playing X-Men: The Ravages of Apocalypse—starring those beloved mutant superheroes—I pined for Professor Xavier, the cool-headed leader who brought balance to the others' raw fury.

A conversion of MacSoft's Quake, Ravages uses the original's engine but replaces everything else with pieces from Marvel Comics' X-Men universe, including an unbelievably convoluted storyline. Suffice it to say that the X-Men's arch-enemy Apocalypse seeks world domination and has assembled an army of cloned X-Men. You're a cyborg, built to infiltrate Apocalypse's base and

thwart his plans.

Graphically, Ravages offers a confusing mixture of improvements and disappointments. Its environments feel like those in a Marvel comic book, but its simplistic levels lack Quake's grand space and nightmarish claustrophobia. The characters, though, are spectacular. Each X-clone is easily recognisable even from a distance, complete with unique movements, weaponry, and tactics. Beast is particularly believable, tumbling and bouncing like a blue rubber ball, pausing only to thump you or pound the ground.

Of course, you could hardly expect to dispatch such wonderfully crafted enemies with a single blast. If you're used to wading through waves of corpses, you're in for a shock.

These X-clones are tough, and their weapons pack a devastating wallop; expect extended battles with foes that absorb astonishing amounts of punishment.

In theory, Ravages' emphasis on tactics over firepower forces you to learn to manoeuvre rather than merely take aim. In practice, though, the game needs more polish. Even the easiest setting features multiple, nasty enemies and long stretches between health power-ups. Experts may find this challenging, but most players will just be frustrated. And Ravages makes the mistake of unveiling most of its characters and weaponry in the first two levels, leaving little suspense for later.

I had great hopes for multiplayer action—where you assume the X-Men's powers—

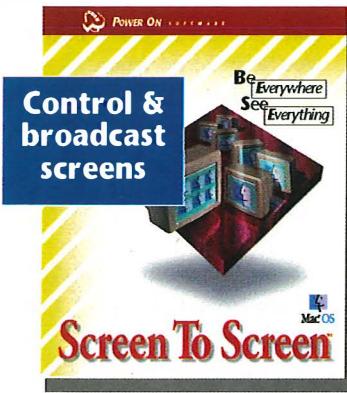
but encountered endless troubles setting up games and getting the server and clients to talk to each other. And after all that effort, the head-to-head matches were boring.

If you already own Quake and you're itching for more, you'll enjoy X-Men: The Ravages of Apocalypse. But if you don't already own Quake, don't rush out to buy it simply for the sake of this conversion. ☐

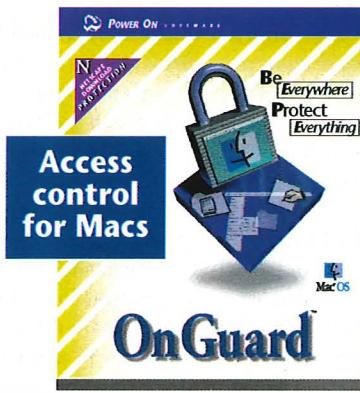
Type:	Game add-on
Rating:	3
RRP:	\$34.95
Distributor:	Try & Byte
Telephone:	02 9906 5227
Facsimile:	02 9906 5606
Reviewer:	Cameron Crotty

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Painter 3D

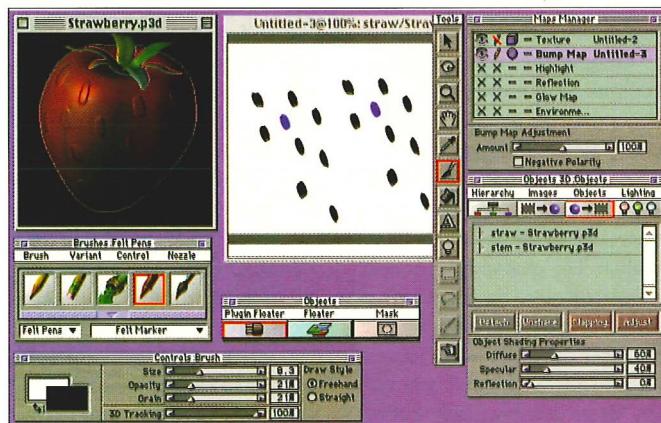
PAINT TEXTURES ON TO 3D MODELS

An indispensable capability for 3D modellers and animators is being able to paint textures, highlights, reflections, glows, and environment maps directly on to 3D objects in real time—this is Painter 3D's aim.

Painter 3D looks a lot like Painter: it includes almost all of the same palettes and tools—including Painter 5's new plug-in floater tools—but it also has the same cumbersome implementation, which can be daunting for new users.

The new Objects palette makes it much easier to manage complex 3D models you import into Painter 3D: it shows the hierarchy of the parts of your 3D model and lets you easily select and hide separate pieces. The new Images palette lets you easily see which maps are assigned to which objects in your scene, and it lets you lock and hide maps.

Other mapping improvements in Painter 3D include the ability to assign one map to



Painter 3D's Maps and Objects palettes help reduce some screen clutter, but the program's tool collection is still unwieldy.

several different objects. And to help you decide what size map to use, Painter 3D now offers a Minimal Distortion option, which automatically calculates and recommends an aspect ratio for every map you create.

Another much-needed new feature is the set of Normals controls, which lets you smooth, repair, and invert polygon normals that were incorrectly

imported. Such polygon normals can make models appear to have holes.

Despite all its painting power, Painter 3D preserves one of the weaknesses of Detailer: the inability to save textured models in several different 3D file formats. If you're using a 3D program other than MetaCreations' Ray Dream Designer, you'll have to save all

of your maps as TIFF files and reposition them by hand in your 3D program of choice.

MetaCreations has done a good job of improving an already powerful product—but using Painter 3D's texture maps in any application other than Ray Dream Designer can be a hassle. Native support for more 3D programs would help Painter 3D become the professional tool it could be. Still, for painting texture maps directly onto 3D models, there's no tool on the market that comes close to Painter 3D. 

Type:	Painting
Rating:	
RRP:	\$599 (\$419 education)
Distributor:	Scholastic New Media
Telephone:	02 4328 3555
Faxsimile:	02 4328 2205
Reviewer:	Ben Long

Action Files

BUILD A BETTER DIALOGUE BOX

Action Files serves up simple yet very handy functions. It appends a hierarchical menu to both the Open command and the Save As command in the File menu, listing favourite and recently accessed files and folders. In the Action Files control panel you can change default display settings, such as the maximum number of files and folders you want in the menu, and choose which applications you don't want to have Action Files' functionality. Applications with their own hierarchical menus, such as QuarkXPress and Microsoft Excel, don't handle Action Files' menus properly.

But Action Files' real power is in how it beefs up the functionality of your Open, Save, and Save As dialogue boxes—which you can now resize. It

adds a menu bar that offers many of the same operations as the OS 8 Finder menu bar. For example, without exiting the dialogue box, you can create new folders; move items to the Trash; use the Get Info command for files and folders; and label, rename, duplicate or make an alias of an item. You can perform these actions on only one file at a time, however.

You can use Action Files' View menu to sort items in the dialogue box by criteria such as name, size, kind, label, and date; or you can sort by clicking on the corresponding column heading in the list. And you can select recent files and folders via the Folders and Documents menus.

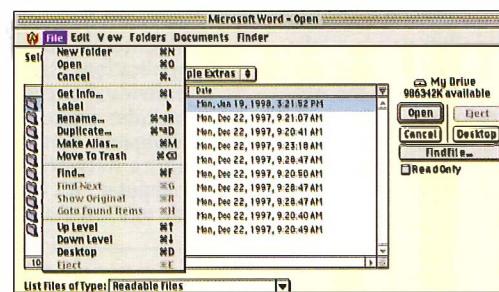
Action Files also sports a Find command that lets you search using nearly all the same criteria as in Mac OS's Find File.

Regrettably, Action Files' search fields don't support Macintosh Drag and Drop; unlike with Find File, if you choose to search by creator you can't drag and drop a file into Action Files' search field and expect that file's creator to appear in the field.

Apple should consider folding Action Files 1.0's features into a future release of the Mac OS—they're that good. If you'd like your Open and Save dialogue boxes to be as option-

packed as the OS 8 Finder, you're ready for Action. 

Type:	Utility
Rating:	
RRP:	\$79
Distributor:	Trio Technology
Telephone:	07 5577 4411
Faxsimile:	07 5577 4455
Reviewer:	Christopher Breen



Power On Software's Action Files lets you perform Finder-like functions without exiting a dialogue box.

Dark Colony

A RATHER CONVENTIONAL ATTEMPT AT THE GENRE

Dark Colony is set on Mars in 2137. A new energy source of wondrous proportions has been discovered there, which is why humans have begun colonising the red planet. They terraform, oxygenate and even release fauna from Earth. It becomes a thriving

world, yet there were problems almost from the start: strange malfunctions and inexplicable accidents; even entire colonies have disappeared.

Then the Taar appear. They are your 'typical X-File aliens' with long drawn-out faces and big black eyes. Their home

planet has been destroyed, and they are intent on establishing themselves on Mars. Their next target is Earth. Obviously, the humans have different ideas.

In Dark Colony you can play for the Taar or the Humans. Each side has its advantages, yet they are well balanced as far as playability is concerned. The plot is well outlined in the detailed manual and there are high-quality (if a bit violent) video sequences.

The in-game graphics and units are also very good. Everything is well represented and the array of different units makes for an entertaining and addictive game that is well worth playing. Multiplayer support adds an extra dimension to Dark Colony: games of this genre are often most enjoyable when you are playing against somebody you know.

Dark Colony is a game that

works well on the basics: decent graphics, an engaging plot and enveloping gameplay. It is, however, a rather 'conventional' attempt at the genre. There's nothing mould breaking about it. Think of it as a cross between Warcraft 2 and Command & Conquer.

You'll need a Power Mac with at least 16MB of RAM, 10MB free on your hard disk (though 66MB is recommended) and a 4x CD-ROM drive. 



Humans going on the offensive in Dark Colony.

EndNote 3.0

INDISPENSABLE IN ACADEMIA

Over the years, I've probably saved hundreds of hours by using EndNote to format citations and bibliographies in my research papers and books. With version 3.0, Niles Software has managed to make an indispensable tool even more powerful by letting you access internet- or intranet-based databases from within EndNote.

EndNote's search feature works with dial-up or direct connections and is compatible with any database server that follows the Z39.50 standard—MedLine, for example, and most Australian university library catalogues.

You'll need a unique connection file for each remote database you want to access; EndNote ships with preconfigured files for more than 100 databases, and you can download new ones free from www.niles.com. The manual

even gives detailed instructions on how to edit connection files and create new ones. If the database is restricted to subscribers, you'll be prompted to enter a user ID and, if necessary, a password.

Once you're online, you can use EndNote's standard search engine to look for references. EndNote displays a dialogue box showing how many matching records were found, so you can retrieve as few or as many references as you like. Depending on the number of records and the speed of your connection, it may take a few minutes to capture them all. When you're finished, you can transfer the references into an EndNote library with one mouse-click.

In some cases, EndNote's search options aren't as comprehensive as those offered by a database's provider. For example, you can access the MedLine

database at www.infotrieve.com/freemedline/ at no charge by using a front end that lets you look for references based on an author's institutional affiliation; that option isn't available when you use EndNote to search the same database. But EndNote's engine is adequate for many searches, and it's especially valuable when you need to find only a reference or two.

For databases that aren't accessible online, EndNote 3.0 still lets you import references that have been saved in text files—unlike the previous version, EndNote 3.0 no longer requires the separate EndLink to import references.

The new release also sports several other improvements, including compatibility with AppleWorks (formerly Claris-Works), support for drag-and-drop transferring of references among libraries, and a plug-in

for Microsoft Word 6 and Word 98.

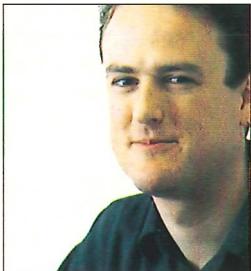
Also, an EndNote 3.0 plugin for Microsoft Word 5.1 should be available by the time you read this.

If you're already an EndNote user and you work with remote databases, the upgrade is a worthwhile investment. If you're still formatting research papers the old-fashioned way, EndNote deserves a prominent place in your software tool kit. 

Type:	Bibliography manager
Rating:	
RRP:	\$449 (\$399 academic, \$289 student)
Distributor:	Crandon Services
Telephone:	02 6658 3674
Facsimile:	02 6658 3675
Reviewer:	Franklin Tessler

Education

Nice work if you can get it



Steven Noble writes about Apple and education in Australia.

Apple Computer Australia shakes up its education channel.

A bit of pain for a lot of gain—that's the philosophy that Apple Computer is applying to its world-wide sales channel. The company is more than willing to pull out of any channel relationships that it feels are not working to the platform's advantage.

In Australia in 1997 that meant pulling out of most department stores. In this US this year, it meant de-authorising about 1200 resellers. Worldwide, it has meant an aggressive 'silverlight' campaign to stop unauthorised retailers from selling Macs or using the Apple logo.

Now, Apple Computer Australia is also radically restructuring its relationship with its K-12 (kindergarten to year 12) agents, to create a one-to-one relationship between each agent and the schools in a particular region, according to Martin Perrins, manager for consumer and K-12 education with Apple Computer Australia.

Apple Computer has followed an agency model in the Australian K-12 education marketplace for more than two years. This means that the education salespeople at Macintosh retailers carry Apple business cards, and the prices and services they offer are those stipulated in Apple's education price list and service contracts. They are independent businesspeople, with mortgages and aspirations and staff to support, but they don't just order Macs wholesale and sell them retail. Rather, they are agents of Apple Computer—they represent the company.

In addition to the product itself, these agents are contracted to provide after-sales service to schools on behalf of the company. They can help schools rent Macs from Apple (the Apple School Access Plan), or buy Macs under finance. They provide three years' AppleCare after-sales support.

By establishing a one-to-one relationship between each agent and the schools in its allocated region, Apple will prevent multiple quotes on Macintosh product—a waste of everyone's time, as agents should be providing identical quotes anyway. Fewer agents also means lower support costs for Apple. In turn, Apple is assuming responsibility for invoicing schools, reducing the administration costs borne by the agents.

State governments are pouring millions into schools for computer purchases. Despite this, margins for retailers are actually falling, according to Perrins, because of new centralised tender programs and the like. By reducing the number of agents, Apple hopes that those who remain will collect reasonable revenue, both making this business worth their while, and helping them fund appropriate service

and support schemes and promotional strategies.

These centralised buying schemes raise the stakes for Apple, and the company has to deal with each state government before its agents enter the fray. The result? 50 percent of the NSW Department of Education rollout has been filled with Macs—more than 20,000 units over the past 18 months. Apple's market presence has fallen in some other states, however.

Most rural areas and smaller cities are already serviced by just one agent, but this has not been the case in Brisbane, Melbourne and Sydney. For this reason, Apple sent a 'request for proposal' (RFP) to its sales channel in these three cities, seeking expressions of interest in the education market. At the time of writing, the three-city RFP was close to completion, and Apple had decided to extend the process nationwide. However, the company had not yet named its two Brisbane agents.

The Melbourne market will be divided into Choice Connection and Desktop Power regions. The latter company has been known primarily as a Masters of Media reseller, but it acquired much of IC Technology's education business earlier this year, according to Perrins. Computers Now no longer has agency in Melbourne. "They came to education late," said Perrins, "and probably it wasn't their primary focus".

Choice Connections also gets part of the Sydney market, along with Penrith-based reseller Aymena. SouthMark Solutions, which incorporates the former Logical Solutions, can no longer act as an Apple K-12 education agent in Sydney (or Brisbane). Sydney-based Kurrawood Computers, which had been quite involved in K-12 education, also loses agency.

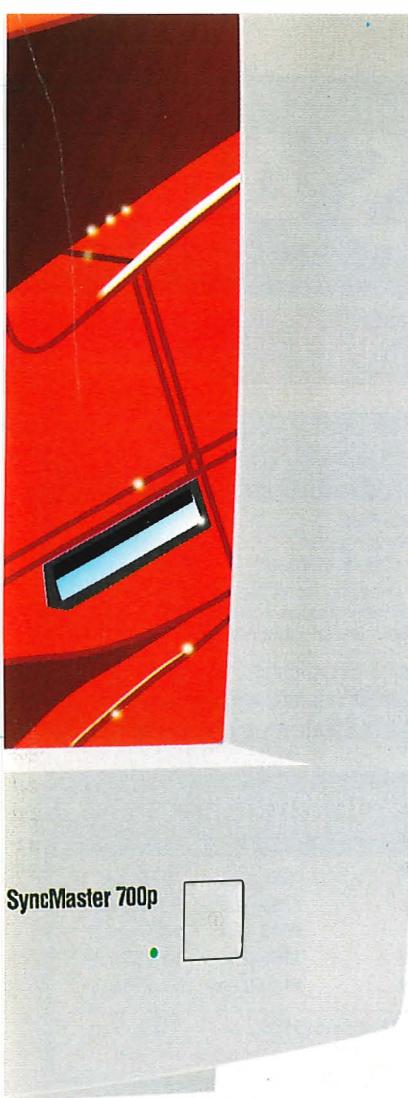
Heather Bullot, managing director of Kurrawood Computers, agreed that the RFP would be good for Apple Computer, but expressed concern for those schools that would no longer be able to deal with their preferred channel partner.

Perrins conceded that some schools might prefer other agents than those they have been allocated, but argued that the program would improve service to schools. Apple will assess agents on their performance in their allocated region, both in serving established Mac-using schools, and in winning new contracts in those where Apple has not had a presence.

It's regrettable that micro-market forces will no longer weed the good agents from the bad. Rather, Apple itself has determined their future in this market, inevitably smashing the dreams of some former education resellers. However, the company is more committed than ever to responding to macro-market forces, and winning the marketshare war with its compelling education products. Now that it knows which agents are servicing which schools and regions, it has the opportunity to ensure they're all working towards this goal and being well rewarded for their efforts. ☒

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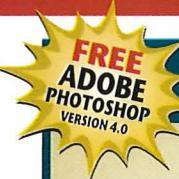


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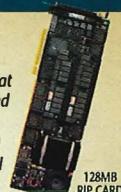
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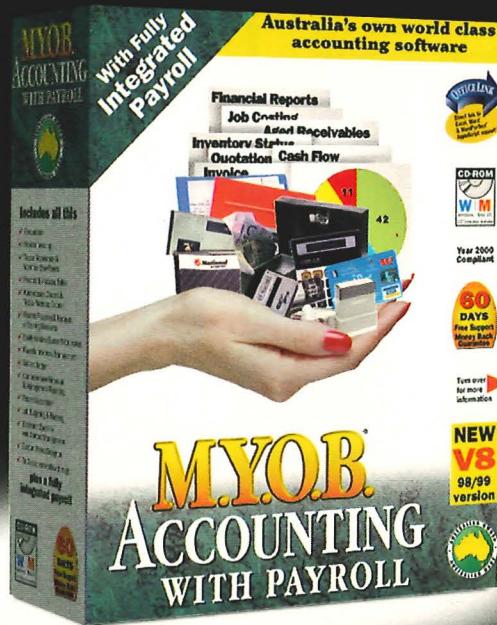
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The iMac cometh

A star is born, as Apple gets set to launch its groundbreaking new consumer Mac.

By Andrew Gore and Anita Epler

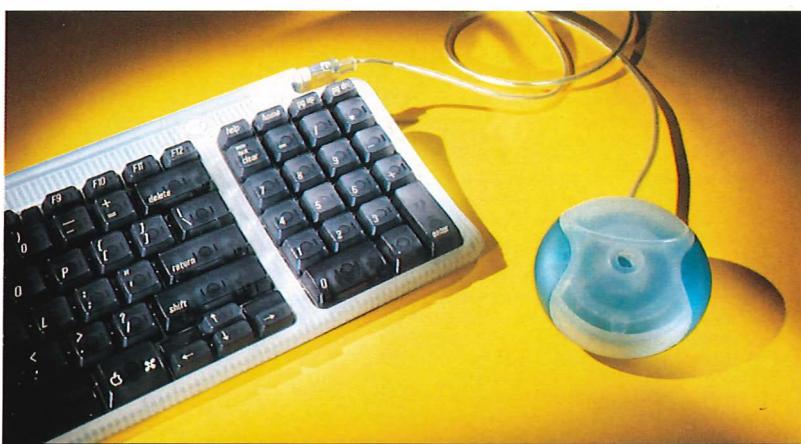
Retro is in, and Steve Jobs knows it. He's reached into Apple's past in hopes of blazing a trail back into the hearts of consumers, with a daring new entry-level Macintosh: the iMac. Two years ago, Apple quietly exited the low-cost computing market, citing an inability to compete with manufacturers of Windows-based PCs on price and time-to-market issues. Since that time, the company down-sized and, according to interim CEO Jobs, became much more efficient and able to deliver new products faster. As a result, Jobs said, Apple is ready to re-enter the consumer market with a dramatic new Macintosh that relies as much on nostalgia as it does on bold technology and design. The iMac will offer leading-edge capabilities, a breathtaking design, and a bargain price when it ships in Australia this August for \$2795 RRP.

For years, Apple relied on pedestrian designs for its desktop computers, leaving visual innovation to PowerBook designers. The iMac is different: it demands to be noticed, sporting a fresh, ultra-modern design that is at the same time very familiar.

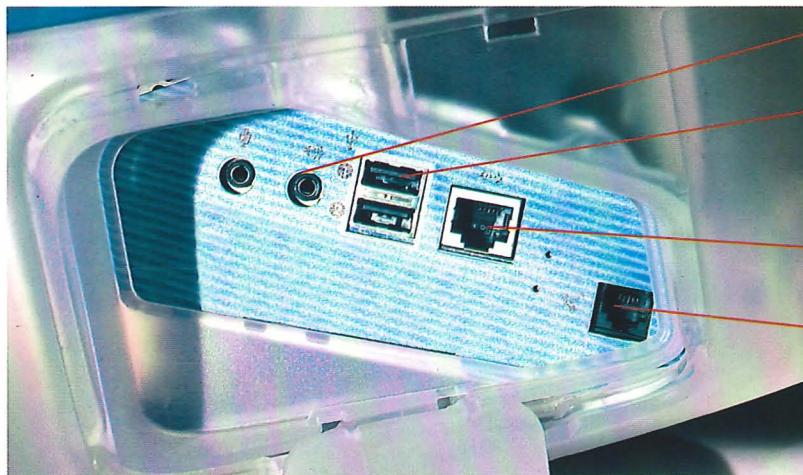
It's hard not to recognise the iMac's lineage: the all-in-one case, the tiny footprint, even the integrated handle—all suggest the original 128K Macintosh. But this is where the similarities end. Using translucent plastics of 'ice' and 'Bondi blue' (in homage to the Sydney beach), Apple's industrial-design group created a computer without a single straight line—even the keyboard components are curved. The case allows through just enough light to suggest the outlines of the

iMac's internal works without revealing too much.

Every piece of this system—from cables to key caps—uses translucence, curves, and light to great effect. The round mouse reveals a tracking ball that's half white and half blue-green—watching the mouse while it's in motion can be mesmerising. Adding to the space-age effect, Apple will use holographic stickers for port identifiers and other labels. A translucent white flip-down foot props up the keyboard, coordinating nicely with the iMac's aquamarine appendage.



The round mouse's translucent case lets you watch its two-colour ball rotate and spin as you drag your cursor—a hypnotic effect. Like those of the G3 PowerBooks, the iMac's keyboard sports function keys and inverted-T cursor keys. Like all things iMac, the key caps are transparent, too. The keyboard offers two USB ports (one is used to connect the mouse) and a USB hub, to allow daisy-chained devices. A hard-wired cable connects the keyboard to the iMac, leaving the second port free.



If the iMac's built-in SRS speakers don't move you, you can attach external speakers here. An audio-in jack is located nearby.

Twin hot-pluggable 12Mbps Universal Serial Bus (USB) ports are the iMac's only connection to the outside world, in lieu of the familiar SCSI, serial, and ADB ports. The keyboard uses one plug, leaving the other free for a scanner, external modem, printer, removable-media drive, or other external device.

This RJ-45 jack looks like a standard Ethernet port, but it combines 10BaseT and high-speed 100BaseT capabilities in a single, auto-negotiating connector.

A 33.6Kbps software modem lets you surf the net at moderate speeds. The iMac supports faster connections via external USB modems, or via an Ethernet connection to a LAN or a cable modem.

Slightly ahead of its time

Breakthrough design doesn't stop on the iMac's surface: a cutting-edge logic board hides behind the futuristic plastics. A 233MHz PowerPC G3 processor complete with a 512K backside cache—a combination that should yield respectable performance—lies at the heart of the newly designed board. Like the new G3 PowerBook Series, the iMac uses SODIMM RAM, a common memory standard on Wintel PCs. This design choice should make it easy and inexpensive to expand the iMac beyond its standard 32MB of RAM, up to its 128MB maximum. A daughterboard houses the processor, two RAM slots, and a new Open Firmware ROM.

The processor daughterboard connects to the main logic board via a speedy, 66MHz PCI system bus. The iMac comes with the ATI Rage IIc 2D/3D accelerated-graphics chip set and 2MB of SGRAM for video. Connectivity features include 10/100BaseT Ethernet via an auto-negotiating RJ-45 jack, a 4Mbps IrDA infrared port, a 33.6Kbps modem, and two 12Mbps Universal Serial Bus (USB) connections.

Rounding out the package, the iMac comes with audio-in/out ports on the side of the unit, two headphone jacks on the front of the case, and a low-noise digital-audio chip that supports simulated surround sound (SRS) on the iMac's two integrated speakers.

A rear door offers access to a slide-out chassis that houses the logic board and media bays, making it easy to upgrade both RAM and storage devices; a 4GB EIDE hard disk and a 24x ATAPI CD-ROM drive are standard equipment.

Like the original Macintosh, the iMac sports a built-in display. The shadow-mask 15-inch monitor offers a 13.8-inch viewable area with a 0.28mm dot pitch; it supports 24-bit colour at 640 by 480 and 800 by 600 pixels, and 16-bit colour at 1024 by 768 pixels. Beefing up the SGRAM to 4MB provides 24-bit colour at the highest resolution.

The missing links

Considering all these amenities, the most shocking part of the iMac isn't what it offers, but what it lacks. The iMac has no floppy drive.

The iMac's integrated microphone is similar to those found on Apple's AV monitors and all-in-one systems.

The 15-inch (with 13.8-inch viewable area) shadow-mask monitor features high refresh rates—117MHz at standard resolution, down to 75MHz at maximum resolution—to reduce flicker, and a 0.28mm dot pitch for enhanced readability.

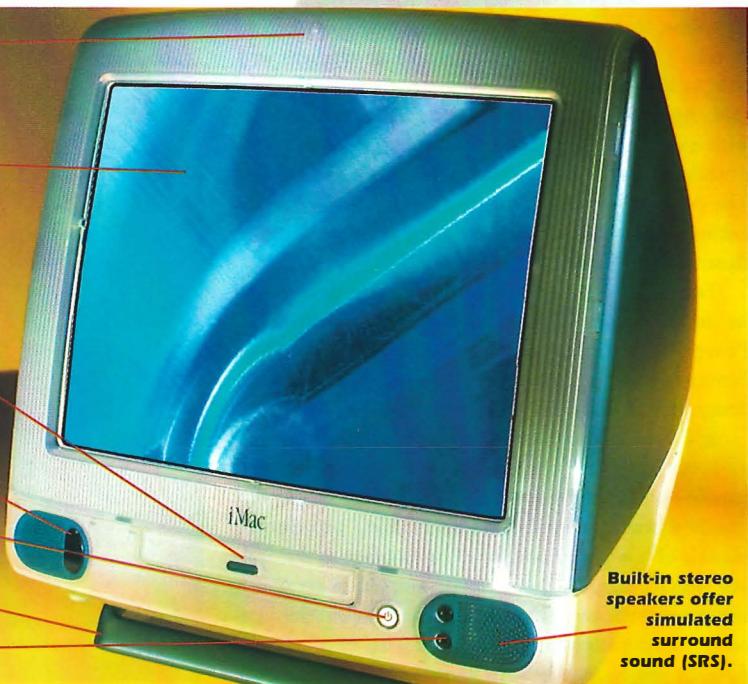
Gone are the days of loading software from floppies—at least Apple hopes so. You'll use this 24x ATAPI CD-ROM drive to install all your programs, unless you download them from the web.

A full-speed (4Mbps) IrDA-compliant infrared port lets you beam data to other IrDA devices such as PDAs, PowerBooks, and printers.

The unit sports its own power button. A green light indicates power is on; amber denotes the iMac is asleep.

Like its keyboard, the iMac has a flip-down foot that tilts and raises the system.

Twin headphone jacks let two users use a single iMac—a feature that's especially welcome in classrooms.



Built-in stereo speakers offer simulated surround sound (SRS).

And most dramatically, this new consumer offering has no SCSI port, no standard serial ports, and no ADB ports. Apple has opted to replace these familiar connections with USB, a high-speed serial architecture that has suffered from slow adoption on the Wintel platform despite its technical advantages.

USB: ready for prime time?

Apple's renunciation of its old connectivity standbys—SCSI, ADB, and traditional Macintosh serial ports—in favour of the Universal Serial Bus (USB) is perhaps the biggest variable in the iMac's equation.

At the time of writing, no current Mac peripherals support USB. Unless printer, scanner, or other external-device manufacturers take the time to write special drivers and provide adaptor cables, chances are that iMac owners won't be able to use any devices they already own—or those released before the iMac's debut. It's physically possible to connect non-USB peripherals to the iMac with an adaptor, but peripherals vendors must write USB drivers before their devices can communicate with the iMac.

However, Apple claims that hardware vendors will soon offer a wide variety of USB devices for the iMac. And indeed, some have already announced their plans to do so. Imation and Panasonic are working on a USB device that will read and write both floppy disks and proprietary 120MB SuperDisk removable cartridges. USB is part of Hewlett-Packard's plans to become the premiere supplier of printers for the Mac. And, Newer Technology is working on a USB-to-serial converter and a USB floppy drive, amongst other devices.

Although USB offers an inexpensive and speedy alternative to traditional serial and ADB, it's a poor substitute for SCSI because the speeds of USB devices are interdependent: the more active devices on the bus, the slower each USB peripheral is likely to perform—a major issue for storage products.

(As USB spreads throughout Apple's product line in the coming year for mid-speed peripheral connections, the company will increasingly turn to Firewire as its cross-platform standard for high-speed peripheral connections.)

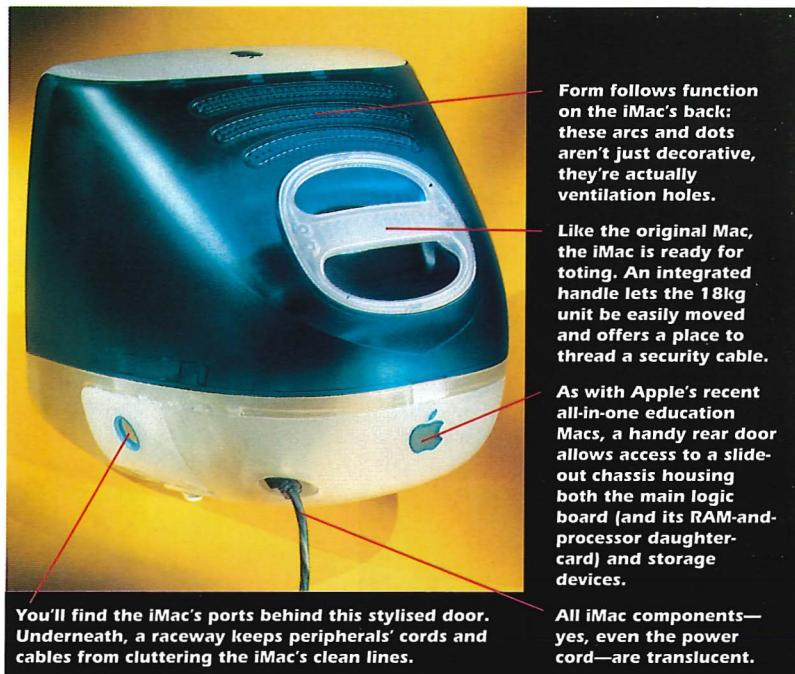
A machine equipped with USB can support up to 127 logical devices, including disk drives, keyboards, mice, modems, scanners, cameras, printers, and even monitors. Still, the iMac's two ports might seem rather skimpy, considering that every peripheral device has to have its own connection. However, because USB uses a hub topology (like Ethernet), adding more ports is simply a matter of connecting a powered USB hub, a feature built into many USB devices. The keyboard that comes with the iMac acts as such a hub: both the mouse and another USB device can be plugged into it.

CHRP-like simplicity reborn

Using widely available technologies to reduce costs was one of the key concepts behind IBM, Motorola, and Apple's now-abandoned Common Hardware Reference Platform (CHRP) specification. The iMac isn't CHRP-based, but it's darn close, featuring PC-standard RAM and an Open Firmware ROM in addition to its USB support.

Those who followed the CHRP saga will recall that an Open Firmware ROM contains only minimal hardware-addressing instructions, unlike current Mac ROMs that carry complex, machine-specific instruction sets. With Open Firmware, most instructions are instead loaded into RAM.

As a result, the Mac OS takes up more RAM on the iMac, but future ROM updates will be much easier to make, shortening the production times for new Macs dramatically. As the iMac's marketing manager told us: "The work we did on CHRP is the main reason why we could develop the iMac in just ten months."



The once and future Macintosh

Once Apple gets peripheral issues ironed out—and Apple assures us that it will in time for an August launch—it seems the iMac is destined to be a hit among the installed base of Mac users, hungry for a machine they can be excited about. The real question is whether Apple will be able to convince current non-Mac users—or even non-computer users—to buy an iMac.

Here, like so many vendors, Apple is relying on the popularity of the internet. It's hoping that the Mac OS's legendary ease of use, combined with the iMac's multitude of built-in networking options (100BaseT is a natural for cable-modem connections, for example), will help bring more users into the Macintosh fold. Apple has set its sights high for the iMac; although it declined to state how many units will be manufactured, marketing managers told us that the iMac launch would be "probably the biggest in Apple history."

Will this latest chapter in the Macintosh saga be Apple's success story at last? Only time will tell. ■



Second to none

By Luke Oliver

How to choose the former Macintosh model that's right for you, find a secondhand system at the right price, and give it the once-over to ensure it's in good working order.

So, you want a Mac. But the gee-whizzy of the G3 is too overwhelming, the iMac is too far away, and the current PowerBook line-up is just a little too sophisticated for your casual needs. Maybe you just want a simple terminal for another family member to type on while you're surfing the net. Have you considered a secondhand Mac?

Macs have an outstanding reputation for reliability and longevity—reflected in the value their owners place on them. Quality engineering equates to long life, and even a Mac Plus—new in 1985!—will run System 7.5 happily, which is one of the reasons they're still available secondhand while most comparable computers from its era are serving time as



landfill. Why not take a step back, save a few dollars, and love an older Mac?

Choosing the right model

A basic assessment of your needs should be the starting point: think about what you want your Mac to do, and find the software that does it. You might decide that your needs are simple and will stay that way; you may also decide that you need to make provision for the future. For example, an old Mac Plus might make a worthy word processor for Gran, but things will get messy if you later decide that she needs to be integrated into the loungeroom's Ethernet network for printing. Here's some food for thought that will help you map out your requirements.

For simple word processing, desktop publishing and financial concerns, it's hard to go past the \$174 RRP program AppleWorks, formerly known as ClarisWorks. There are now five versions of it, and even the most recent—AppleWorks Office 5.0—has modest RAM and disk-space requirements. Incidentally, hard disks have been readily available for nearly 15 years, so if the machine you're looking at doesn't have one fitted, give it a miss. Otherwise, almost any Mac with 4MB of RAM will do for the prospective AppleWorks user; look at the Mac Plus (\$50) and up—spend more to support a faster typing speed.

If you need software that demands even less of a Mac than does AppleWorks—because you don't want to upgrade that Mac Plus to 4MB of RAM, for example—consider the shareware alternatives, such as Tex-Edit Plus and Share-Draw. Programs such as these are available through web sites such as the AusMac Archive (www.ausmac.net), or through Macintosh user groups (see page 90). Or, track down a second-hand copy of an earlier version of ClarisWorks.

If you need to run an office suite more powerful than AppleWorks, then you're probably looking at Microsoft's \$739 RRP Office 98 Macintosh Edition. This program, like many others, can only run on PowerPC-based Macs, which are considerably more pricey than a trusty Mac Plus.

For more intense publishing needs, look for a machine with a slot capable of handling a new or additional video card. Manufacturers such as ATI produce video cards that can add colour and video acceleration to an otherwise ordinary Macintosh, along with support for a second monitor—the additional screen real estate is valuable for publishers. The machine being cast aside by a publishing professional may serve a publishing aspirant brilliantly; particularly if there's a few dollars left in the budget for a bigger hard disk and a second monitor. However, secondhand monitors can be hard to come by on their own; be sure you have your complete package before signing on the dotted line. On your shopping list should be anything in the Mac II family—look for a hard disk in the 500MB range and up—or a Power Macintosh. A PowerPC-based Mac (most of which are known as Power Macs) is essential for anything resembling serious publishing: start by looking at models clocked at about 100MHz (perhaps \$1800 with monitor) if you wish to run current versions of the main publishing programs. You can save a few dollars by buying under this, but you'll be making a lot of coffee while your Mac thinks about every mouse click: spend the change on an espresso machine.

A secondhand Mac's "hall of fame" in the Sydney office of Mac Rent.

PHOTOGRAPH: DAVID KICONO





If you're planning to join the hundred million people with an internet address, there is a couple of prerequisites. The first is colour, as web browsing without colour is almost impossible. The second is RAM—the current generation of web browsers ask for upwards of 10MB. The Mac in question will need to have enough memory for the job—or an upgrade is immediately in order. Mac II models (from a few hundred dollars) are competent if sluggish, but any Power Macintosh (\$1500 and up) should do the job.

Where sharing information is an issue, lean towards an Ethernet-ready Mac. Ethernet is clearly where the world is headed, although LocalTalk remains functional, easy and efficient for small networks (see 'A party line for the nineties', March 1998). Ethernet cards are inexpensive, and simple to add to most Macintosh computers with an appropriate slot—which includes the PC Card slot in contemporary PowerBooks. Other Macs go one step beyond Ethernet readiness, by actually coming with built-in Ethernet ports.

Audio-visual input and output (A/V I/O) debuted with the Quadra 810av and Centris 660av, their digital signal processors (DSPs) bringing video to the desktop. More recent Power Macs are more powerful audio-visual systems than these machines ever were, even though they lack DSPs. However, for domestic audio-visual work, any Macintosh with the 'av' moniker will serve, provided you're using DSP-

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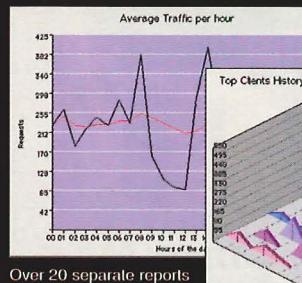
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compatible software. The entry level is the Centris 660av at around a thousand dollars.

The Centris and Quadra systems were also the first to use the 68040 processor, which eventually found its way into cheaper system such as the LC475. The 68040-based Macs are the least powerful Macs on which Mac OS 8 can be used, while a PowerPC-based system will be an absolute necessity for forthcoming system releases such as Rhapsody 1.0 and Mac OS X.

While many great features—ease of use, plug and play upgrades—are found in every Macintosh, others have been introduced over the life of the range. SCSI—for connecting a range of quality off-the-shelf peripherals, such as scanners—made its first appearance in the Mac Plus. Apple Desktop Bus—for connecting the current range of Macintosh mice, keyboards and joysticks—made its debut in the Mac II and Mac SE. True 32-bit memory addressing—which lets your Mac take advantage of more than 8MB of RAM—didn't become a standard feature until the IIci. Internal CD-ROM was impossible prior to the IIvi. Interface-card standards vary. The fact that every Mac sports a familiar interface may lead to a false sense of security: don't assume that all models have every current Macintosh technology.

Above all, consider your needs, which are the reason you're buying a Mac. If the model you're considering cannot fulfil your primary need, you'll have to budget for an upgrade, or pass it over for something more powerful. Some upgrades, like adding memory or processor cards, are simple. Others, like exchanging logic boards or fitting internal CD-ROM drives, are more effort. It's your call.

Where to find it

Having decided the model you want—or, more likely, the family of models you'll consider—it's time to track down a few potential buys. Where do you start?

The Saturday editions of most major metropolitan newspapers have a section for computers in their classified ads where you can find many Macs. Be early: most bargains disappear promptly. *The Trading Post* also offers opportunities to find the Mac you seek, but its bargains can be snapped up quickly, and only those who subscribe to the paper's web site get immediate access to new online listings. Check out <www.tradingpost.com.au>, <www.newsclassifieds.com.au> and <www.market.fairfax.com.au>.

Auctions are another good place where the knowledgeable buyer can pick up a bargain. Prior inspection is permitted—usually the day before—and you can often pick from a range of similar units. However, some discretion is advised: you'll often find faces in the crowd that unknowingly inflate the bidding to a point where the item in question is no longer a bargain. Set yourself a ceiling price before the auction, and beware the 'buyer's premium'—typically a ten percent surcharge over and above the successful bid.

Although most computer swap meets are a sea of secondhand PCs and discounted Windows software, there's usually a Mac or two floating around. These gatherings, like auctions, can often be found in newspaper classifieds. Also, some Macintosh user groups

Luke's picks / favourite moments in Macintosh history

See the Finder (pages 82-83) for estimated prices for each model.



1. Of all the Mac's that took Apple's original all-in-one form factor, the king is the SE/30—although the Colour Classic offers similar performance and a colour screen. Their expandability, performance and affordability make these older machines competent casual file servers or data-entry terminals.



2. For uncomplicated convenience, consider an LCII: you can happily use it with a large-screen monitor, it sports an expansion slot for Ethernet or other add-ons, and it's inexpensive. LC475s are also excellent value, and those in the LC5xx series make neat workstations.

3. Of the Mac II range, two stand out: the IIci and the IIfx. With three slots and on-board video, the IIci offers reasonable speed for its age and plenty of scope for customisation. The IIfx—once code-named 'wicked fast'—can be excellent value, but be aware of its two design peculiarities: any SCSI devices attached to the IIfx will require a special black terminator, and any RAM upgrades will require the use of 64-pin SIMMs.

4. From the Centris/Quadra family, the Centris 650 offers a good balance of price and performance, with loads of upgrade options. Its stablemate, the Quadra 800, enjoyed greater popularity and tends to command a higher price.

5. Picking a PowerBook is easy. If a non-PowerPC-based laptop suits your needs, the 520 range is unbeatable. Built-in Ethernet, internal modem options, a second battery port and the availability of colour made the 520 stand out, and the world is still trying to catch up with its magnificent industrial design. The PowerBook Duo 2300c is the pick of the PowerPC-based PowerBooks readily available in the secondhand market. You'll need a docking station to get full Macintosh functionality out of a Duo 2300c, but it's lightweight, offers punchy performance for its price, and has something approaching sex appeal. Be wary of suspect hard disks in all PowerBooks: replacement SCSI hard disks store more than ever before, but they're quite expensive.



6. The first generation of Power Macs were the 6100, 7100 and 8100—the four-digit model numbers indicate the presence of a PowerPC processor, and the suffix indicates clock speed (for example, a 6100/66's PowerPC processor is clocked at 66MHz). As with all Power Macs, AV or DOS-compatible options push up the price of these models, but they are worth it if you have the need. Of this generation of Power Macs, the 7100 model tends to offer the best value. Being a mid-range product in its heyday, it was well configured yet cheaper than the premium model.



7. Second-generation Power Macs are those equipped with Peripheral-Component Interconnect (PCI) slots, replacing the backwards-compatible NuBus slots found in most multi-slot models from the Mac II onwards. This generation includes the 6400, 7200, 7300, 7600, 8500, 8600, 9500 and 9600 models and others in their series. The 7200 is a capable performer from this generation, but with limited processor-upgrade options compared to some of the others.

8. Beyond that, the new G3 machines are so aggressively priced that purchasing new starts to make sense again.

hold their own Mac-only swap meets. It's at the trading tables that you need to be at your most wary. Performing even a simple power-on test can prove difficult, and tracking down the seller after the event might be more challenging still. A well-prepared swap-meet trader, like anyone selling a Mac privately through the classifieds, will have proof of purchase with them, demonstrating their ownership of the items for sale.

Many Apple-authorised resellers sell secondhand Macs that have been traded in for new systems, although they're not necessarily displayed in their

Warranty issues / what you can count on

Vendors are not legally obliged to provide a warranty according to David Herringer, managing director of Mac Rent, but established secondhand Macintosh dealers choose to do so because it is sound business practice. Also, customers have some protection under common law, he said, and they may be entitled to a 'cooling off' period under their state's consumer-protection legislation.

Common law protects the buyer against misrepresentation, according to Herringer. That is, if anyone knows that a computer is defective, but says that it is in good working order when they sell it, the customer can demand redress. Usually, it's easier to assert this right when you buy from established dealers rather than private individuals, he said, because they're less likely to have already spent your money on a combi van, a map of Australia and 100 litres of diesel.

Furthermore, customers may be entitled to a 'cooling off' period of about seven days under state-based legislation. So, if you enter a dealership looking for a 11ci and leave with a Power Mac 9600 because of sales pressure, you get a chance to rethink your rash decision. Again, Herringer said that these obligations apply to all vendors, including private individuals, but customers are in a stronger position when they are pressing these rights with established secondhand dealers.

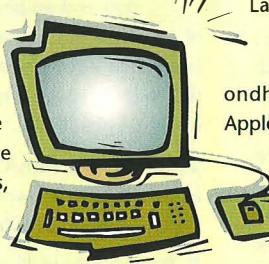
In addition to these legal obligations, many established secondhand dealers offer a warranty. Computers that are "not dreadfully old" get three months at Mac Rent, which Herringer said was fairly standard for the industry. Very old, cheap or worn systems may come with a one-month or one-week warranty, but Herringer said the terms of the agreement are always brought to the customer's attention.

Customers may choose to buy an extended warranty from a secondhand dealer, but Herringer questioned the logic of doing so. Replacing a secondhand system when it becomes necessary may be cheaper than buying extended warranty protection up-front. Also, secondhand systems depreciate rapidly, and not all warranties cover data loss and other important considerations.

Last, Apple's own warranties attach to the computer rather than the individual, according to Herringer.

Therefore, customers may be able to return secondhand Macs to Apple for repair, Herringer said, if Apple's warranty has not yet expired. The company can determine when a Mac was sold from its serial number, according to Herringer, even if the individual who bought it cannot be identified.

— Steven Noble



showrooms; find your nearest via www.apple.com.au/wheretobuy.html.

Specialist secondhand computer dealers are another option. They, like Apple-authorised resellers, may charge more for their products than private sellers, but their guarantees regarding after-sales service can be attractive to the novice buyer. Two secondhand dealers specialising in Macs are Microseconds (02 9281 4120) and Mac Rent (02 9906 6888). The latter has offices in most states, and provides the estimated secondhand price list in The Finder (pages 82-83).

How to assess it

Unless you own a suite of Apple's diagnostic tools, making an informed decision about the quality of a secondhand Mac can be difficult. Here's a simple set of guidelines you can use as a starting point.

First, check the casing—particularly on PowerBooks and all-in-one models. If the seams bear the scars of entry, it's likely the Mac has been opened by someone unqualified to do so. Proceed with caution!

Check the compliance panel, which will tell you the serial number and the voltages supported by the power supply. It's always a good idea to check voltage requirements before plugging a machine in for the first time. After letting the machine idle for at least thirty seconds—to give the hard-disk platters time to stop spinning—you can make a decent assessment of its ability to power up properly. This is significant: the Mac's ability to make its trademark 'bong' sound on startup is a positive indication of its good health. Anything other than the 'bong'—the 'chimes of doom' are a dead giveaway—can mean a problem. Steel yourself for a trip to your local service centre, or walk away from the purchase.

Having turned it on, check the power supply—is the fan spinning? Use a thin strip of newspaper to detect airflow from the case. Exempt from this test are PowerBooks and classic Macs using convection cooling.

Next, check the About this Mac window, by selecting the first item under the Apple menu. This will tell you how much RAM is installed. Using Newer Technology's Guru, which is freeware from www.newertech.com, you can also determine how far you can upgrade this Mac's memory, how much RAM you'll need to buy for your ideal upgrade, and of what sort.

Is the date and time correct? Is it still correct after the Mac was switched off at the wall for 30 seconds, then restarted? If not, chances are the PRAM battery is flat, which can cause all sorts of strange behaviour. Luckily, they're not expensive—\$15 will procure the part at your Apple-authorised reseller.

Examine the screen: Is it square? Is there any evidence of 'burn-in'? Use the General or Desktop Patterns control panel to set a white background and examine it. Expect some burn-in by the menu bar; but look carefully in other areas that may interfere with your work.

Does the hard disk make regular groaning noises? Ensure that it starts up from a 'cold' boot: shut the Mac down, and leave the power off long enough for the platters to stop spinning—a minute is ample. Then ensure it spins up and boots without complaint.

Will the Mac boot from a System folder on a floppy disk that you know to be good? If it can, the floppy drive is unlikely to cause any trouble in the short term. It's a good idea to be carrying a boot disk suitable for the machine you're testing—the Mac OS 8 or Mac OS 7.6 boot disks are logical choices, depending on which range of models you're considering.

There's not a lot to look for inside the case, apart from signs of internal upgrades: most Mac internals are tidy, and messy innards are a warning sign to the trained eye. (Always take precautions against electrostatic discharge before opening the case.) And beware the 'clock chipped' Power Macintosh, which is one with its processor running at a higher clock speed than the one it was tested for. They're faster, but at



the expense of long-term reliability.

Regardless of the state of the rest of the machine, consider spending \$40 or so on a third-party replacement for the Apple-brand mouse. Direct Access Computer Products <www.da.com.au> is one of several companies that offer prompt delivery if you don't fancy the trek to your local store.

There are numerous utilities that can 'audit' a Macintosh, and reveal its vital statistics. For starters, check out Apple's Apple System Profiler, included with Mac OS 8, and MicroMat's TechTool, freeware from <www.techtool.com>.

Bundled extras

Mouse pads, carry bags and dust covers are all nice to have, but add little to the sale price of the machine. There is another practice—bundling software with the Mac—that means you get more than you pay for. Or does it?

If a secondhand Mac comes with software—and all the requisite manuals, licences and original diskettes—you can save a lot of money buying the bundle, rather than buying the Mac and each program individually. If, however, a copy of the software is just installed on the hard disk, *sans* licence, you may wind up paying more than you expected.

Foremost is the cost of maintaining software. Many software publishers will replace media in the event of a disaster, provided you can authenticate your ownership of their product. If you're working with illicit software and need it replaced (inevitably, at short notice), most publishers will look on you with disdain when you cannot prove you own their product.

A similar problem heralds at upgrade time. Imagine procuring a pre-installed copy of, say, Quark-XPress, and needing to upgrade it to keep pace with those around you. The joy of your initial saving turns to dismay when you find yourself buying the new version outright as you're not entitled to the upgrade price.

Grey-market software—programs purchased outside the country, but not in accordance with the publisher's guidelines—is also at question. Whether or not you agree with the concept of a global software licence, some publishers do not offer them, and your personal opinion would count for little if they took your case to court.

Last—and speaking from bitter experience—consider the fact that the machine in question might be stolen. The absence of receipts and original media tells you that—at the very least—something less than perfectly correct is involved in the sale. Proceed with caution.

Worth a second glance

Owning a pre-loved Macintosh can be a joy, so shop carefully, buy something that looks like it's been looked after, and save a few dollars for souping it up when you get it home. 

Luke Oliver blew up the first Mac in South Australia—a 110v model—and has since displayed a fervour around compliance plates and power supplies.

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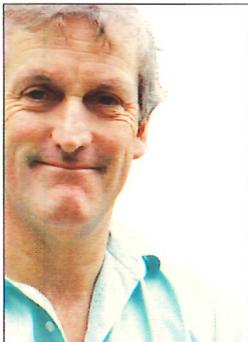
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Talking books



Computer books,
reviewed by Keith White.

Tutorial software is an alternative to traditional dead-tree media.

Taking a break from traditional print media, this month we're looking at two titles in the MacAcademy series of software tutorials on CD-ROM. I've chosen ClarisWorks 5.0 (six disks) as an example of a widely-used program and Director 6.0 (five disks) as a highly-specialised example. Each disk has 12 chapters and runs for about two hours.

First, a look at some basic features that you'll find on every disk.

To start, simply load the CD-ROM and click on the MacAcademy icon. After the startup screen, company president Randy Smith videos in with a cheery welcome. "Just as you can't learn to drive a car by reading a book, you can't operate software programs by reading the manual." Hmm—a questionable analogy, and an issue that I'll take up later.

Remove Randy by clicking Continue.

Another video! This time it's just your instructor introducing himself. (Other titles in the series have female presenters.)

Now it's down to work. If you're in Show Me mode, the disk will run from start to finish. If interaction is your style there are traditional transport controls (fast forward, rewind, play, pause) at the bottom of the screen, along with a volume slider, and Index, Help and Quit buttons. Another slider lets you move between sections ('paragraphs') in a chapter. Note that the transport controls also move back and forwards between paragraphs—you can't move directly to an exact location as you can on a videotape.

Index brings up a screen with 30 or so topics listed on the right and chapters listed on the left. Click on a topic and golden squares light up, showing you in which paragraphs of which chapter your chosen topic is discussed. If

scrolling is too tedious for you there's an alphabet at the top of the screen. Click S and the topic list jumps to the S topics.

Paragraphs you have already visited are coloured blue. The rest are in grey.

Help takes you to a subroutine in which you are shown how all this works.

It's a simple and consistent interface.

Bob Harrington, our friendly and knowledgeable instructor, explains ClarisWorks step-by-step, gliding the cursor around a representation of the program's screen.

Volume one deals with the basics of document creation, editing, formatting and printing. Volume two

covers text—paragraphs, tabs, styles, columns and outlines. Volume three is databases, volume four does spreadsheets and volume five tells you everything about painting, drawing and desktop publishing. Volume six looks at communications and the internet, slide shows, mail merges, macros, button bars and advanced graphics handling.

It's very thorough and not too fast. The advantage of the CD-ROM format is that you can always back up if your concentration wanders or the phone rings. As a long-time ClarisWorks user I was surprised by how many tips and shortcuts I don't know. Perhaps my learning style ('meddle, muddle—manual!') needs working on.

Most people get to grips with a program by asking, "what's the quick 'n easy way to do this?" Being sat down and shown the details really makes a difference. This was confirmed with the Director 6.0 series, guided by the erudite Chris Leach.

The Director series has a different tone—friendly yes, but you're expected to pick up complex routines fairly quickly. The rewind button is useful here.

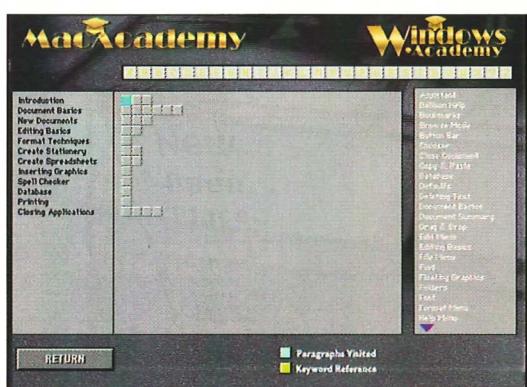
Volume one explains Director's theatre metaphor and introduces the various elements—Stage, Cast and Score, with basic moves in scripts, text and sound. Volume two advances to projectors, behaviours, onion skinning, ink effects and button manipulation. Colour control and film looping are the main concern in volume three, while volume four deals with text, scripting and project management. Volume five rounds off with debugging, movie formats and animation.

A wealth of densely packed information—not for novices. But then specialised programs like Director demand a high level of prior experience.

MacAcademy-style training sits somewhere between the 'How to' books and personal training with an instructor. Moving graphics complemented by the spoken word have a definite advantage over print materials. It's not quite the real thing though. Although the material is covered in great depth you can't question your instructor—you can only rewind and try it again.

It really comes down to one basic question: what's your learning style? Some people learn software from the manual, some dive straight in and work it out through trial and error. Others like someone else to show them first. If you're one of these, MacAcademy's computer training series is well worth a look.

MacAcademy can be reached on 1800 620 611 and fax 03 9705 1077. The ClarisWorks series is \$329.70, the Director series is \$274.75, and individual disks sell for \$69.95 each. A PowerPC processor is recommended but not essential. You'll also need at least a 4x CD-ROM drive, System 7.0 or later, version 2.1 or later of QuickTime, at least 8MB of RAM, and a monitor capable of 640 by 480 pixels.



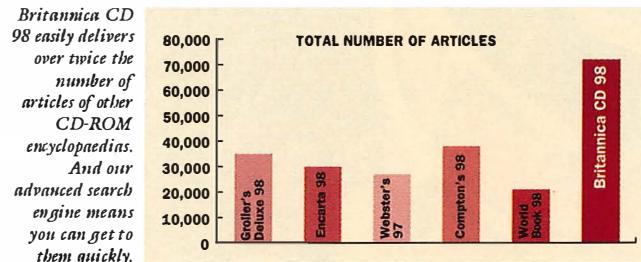
Some of the navigational options in MacAcademy's ClarisWorks Office 5.0 instructional CD-ROM, including find by letter of the alphabet.

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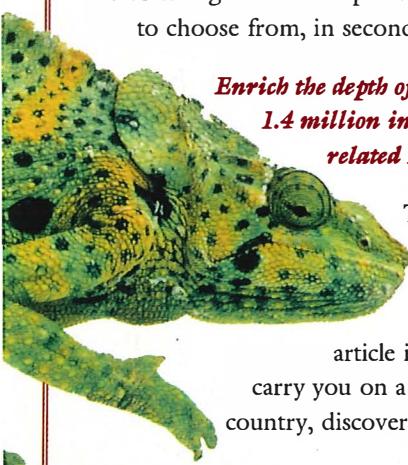
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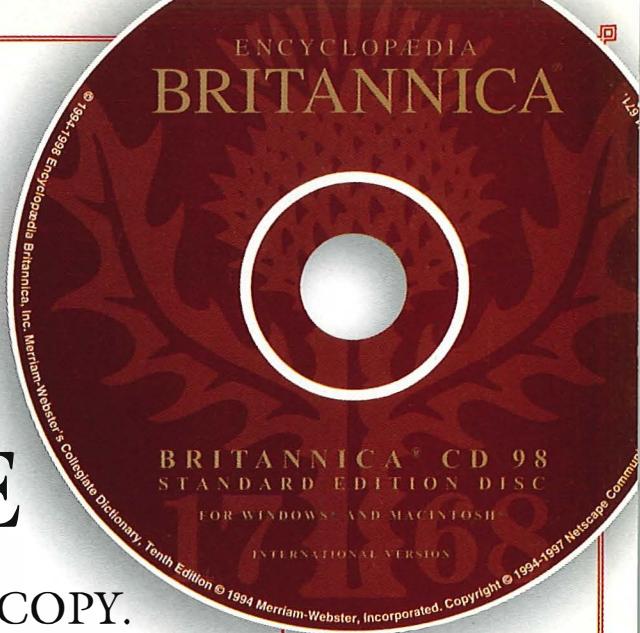


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G3 upgrade

cards can

Quantum leap

take your

old Mac to

new heights

by Cameron Croft

Everything I really needed to know about upgrades, I learned from Wile E. Coyote, Esq. Faced with the task of catching the supernaturally fast Road Runner, the coyote depended on his magical Acme mail-order catalogue for everything from propeller beanies to spring-loaded shoes. Hardly an episode passed without old Wile E. riding jet-powered skates across desert rock formations like an out-of-control roller-coaster car. Now that I'm a grown-up, I know you can't really tie rockets to roller skates and get feasible transportation as a result. However, a modest investment in a processor upgrade card does seem to buy something like Acme's patented super-speed pill for your old Mac.

Thanks to the PowerPC G3 chip, upgrade cards are astonishingly powerful, while selling for little more than \$1000 in some configurations. Like Wile E. Coyote's best gadgets, however, upgrade cards may send you zooming through the skies, but it's just as easy to smack into a cliff if you don't know what you're getting into.

Rockets for the rest of us

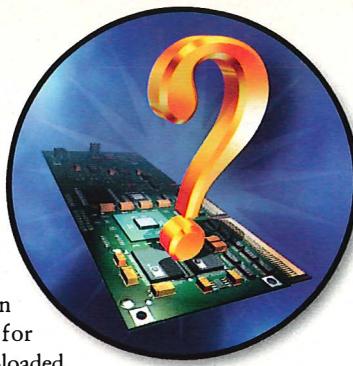
For many years, upgrading was the game of performance hounds intent on chasing down a 10 or 15 percent speed boost no matter what the cost. Meanwhile, most civilians simply bought new computers. After all, a brand-new Mac often sold for little more than an upgrade card, offered better performance, and came with extra goodies such as a large new hard disk, RAM galore, and a fast CD-ROM drive.

But things are different now. The new PowerPC 750—which is commonly referred to as the 'G3'—is the first processor engineered specifically to complement the strengths (and make allowances for the limitations) of the Mac OS. Earlier PowerPC chips provided modest performance gains from generation to generation, but now even systems sporting the slowest PowerPC G3 are twice as fast as systems based on the fastest PowerPC 604, just one generation older.

Better still, an engineering decision Apple made a few years ago has also helped make the upgrade cards cheaper than ever. Beginning with the Power Macintosh 7500 and 8500, Apple placed the processor and clock chip together on an independent card, instead of soldering them on to the motherboard as in previous designs. For the first time, the processor could be popped out and replaced, instead of requiring complex—and expensive—engineering workarounds.

Nevertheless, buying an upgrade card still isn't a total no-brainer. Prices have dropped, but the fastest upgrade cards cost more than a brand-new Power Mac G3/233 complete with a fresh load of RAM, a fat hard disk, a faster system-bus speed, and new hardware technology. In other words, buying an upgrade card instead of a new computer is always a trade-off.

Individual situations will vary, but generally speaking, there are three types of users who will benefit



most from processor upgrades: the heavily equipped, the wary and the thrifty.

The heavily equipped

Do you have more money invested in RAM, add-on cards, and extra storage than in your Macintosh itself? Have you filled every port, slot and bay? Is your system so complex that it's on the verge of becoming sentient?

If so, a processor upgrade can save you the hassle of transferring all your add-ons or, even better, the substantial expense of replacing them.

Owners of NuBus-based systems (the Power Mac 6100, 7100, and 8100) may find this solution particularly attractive, because moving to a PCI-based Mac may require the added expense of acquiring a PCI-to-NuBus expansion box or a completely new set of PCI boards to replace your NuBus cards. One caveat: Before you run out and buy a shiny new G3 upgrade card for your NuBus-based Mac, be aware that some upgrade cards can obstruct NuBus slots.

The wary

It's time to get a new Macintosh, but—despite all the good news of the last six months—you're still uneasy about Apple's future. You don't want to buy a Windows-based PC—although your systems manager might—and neither of you is ready to drop ten grand on several brand-new Macs for your workgroup. If this describes you, then upgrade cards may be your best bet.

They offer a substantial speed boost while preserving the time, money and training you've invested in your current Macs. The fact is, upgrade cards could be just the clever, fiscally-prudent suggestion that will convince your cost-conscious boss not to get rid of your Macs.

The thrifty

That Macintosh sitting on your desk at home has been around for years, and even though it's like an old friend, it's an old friend who's grown just a little slow for your fast-paced lifestyle. You're tired of waiting minutes for applications to pop open, but who among us has a few thousand dollars lying around to purchase a brand-new Mac?

On the other hand, perhaps you just dropped a wad of cash on a new G3 Mac, and suddenly nobody at home wants to use the 'dinosaur' that was once your primary system. One look at Quake running on your Power Mac 6100 and the kids are bugging you to let them at your nifty new G3 Macintosh.

In the past, upgrading an older system rarely made economic sense. But the powerful, inexpensive G3 cards available today can help transform a retired Mac from the world's most expensive doorstop into a viable system.

Easy Upgrading // by the numbers

Generally speaking, upgrade cards are all the same—except when they're different, of course. Manuals contain proper settings, installation tips, and troubleshooting tricks specific to your card. Be sure to read the manual—cover to cover—before trying to install a new card, and follow these installation and troubleshooting tips to help make sure you don't miss a step.

—Cameron Crotty

1. Be safe, not sorry

Back up all your data, including everything on your hard disks, before you try to install the card.

2. Buy the right card

Typically, a single upgrade card will work in a wide range of Macs and clones. However, some clones require modified firmware, so make sure you buy the right card for your computer.

3. Ground yourself

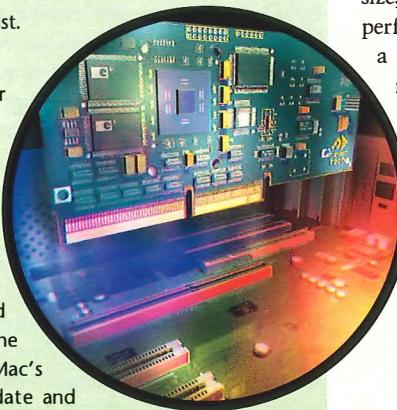
Every manufacturer recommends using a grounding strap—a device that keeps your body static-free—but not every manufacturer includes one in the package. Buy one. Sparking fingers fry chips fast.

4. Software comes first

No card will run at top speed without the proper extensions installed, and some won't run at all. Load the provided software before you do a brain transplant. Make sure to call the company and check its web site to ensure you've got the latest extension.

5. Hit the switch

After you plug in the card, find the motherboard reset switch and press it. (It should be close to the processor slot. Check both your card and your Mac's hardware manuals.) You'll have to reset your date and time settings, but hitting the switch will help your system recognise the new processor.



6. Check your settings

Double-check the card's DIP-switch settings to make sure that they match those in the manual. If they don't, fix them and call the company to confirm. In one case, we received an improperly configured card; in another case, the manual had been printed with incorrect information.

7. Rename the extension

Small changes in your system environment can make a big difference in compatibility. If your card's system extension loads alphabetically, try adding spaces in front of the name to force it to load first. If it's already set up this way and you're having problems, try removing the spaces so it loads alphabetically.

8. Pull the cache

You'll usually get superior performance with the system's own L2 cache still on the motherboard, but pulling the cache may help if you're having problems. In fact, XLR8 actually recommends removing the motherboard L2 cache on installation, although doing so with a Power Mac 8500 is no picnic.

9. Zap the PRAM

Several manufacturers recommend zapping your parameter RAM (hold down $\#$ -option-control-P-R while restarting). Remember that this action resets several basic system preferences (such as Date & Time, AppleTalk, and Disk Cache), so make sure that you clean up after a PRAM zap.

10. Slow down

If your system is still crashing, your final step is to lower the system-bus speed (especially if you're getting bus errors). This is one of the only times when adjusting the DIP switches can be a good idea. You'll lose some performance, but hopefully the card will work.

Understanding the Acme catalogue

A computer's processor is like a car engine. Upgrading it is like dropping a more powerful engine into your car, except with a lot less labour. There are, however, some issues you should keep in mind as you choose the right card for you.

One method that upgrade-card manufacturers (and system vendors) use to increase processor performance is to add more cache memory. Cache memory is special high-speed RAM that's placed physically very close to the processor. The chip stores recently used data in this cache, where it can be accessed many times more quickly than if stored in the system's main RAM banks. The larger the cache you have and the faster it is, the better—up to a point.

All Macs come with a built-in processor cache, but upgrade-card vendors can increase performance by providing larger, faster caches on their cards. Vendors often play mix-and-match games with chip speed, cache size, and cache speed, trying to squeeze out the highest performance at the lowest cost. They generally add a cache that runs either at the same speed as the new processor (a 1:1 ratio) or slower (for example, 2:1, 3:2).

Generally, the larger and faster a cache you have, the better. However, once you factor in cost, there is a point of diminishing returns, as a faster cache adds to a card's expense. Cards with faster caches tend to be slightly faster overall, but they are also significantly more expensive.

The perils of pushing the clock

Upgrade-card vendors aren't the only ones who can play games with card speeds. While upgrade cards are all advertised to run at specific clock rates, it's widely known that you can tweak your card to run faster than its rated speed. The question is, do you want to?

Chip makers such as Motorola and IBM guarantee that the processors they provide to system and upgrade-card vendors can reliably run at a certain speed. That speed rating (for example, 266MHz or 300MHz) is like the line on a tachometer that tells you how fast an engine can operate safely. When an upgrade-card or system vendor installs the processor, it adds a clock chip, which sets how fast it actually runs.

Speed ratings, however, aren't inviolable limits. Chip manufacturers routinely build a safety margin into ratings, meaning that a given processor can usually be made to run faster than it is rated before it will fail (and make your computer crash). Some upgrade-card manufacturers let you take advantage of this by shipping their cards with variable-speed clock chips controlled by DIP switches.

When you install one of these upgrade cards, you can slowly increase the chip speed until your system starts crashing and then bring the speed down from there just a bit. The goal is to eke out every bit of performance that your particular processor is capable of. In theory, it's as easy as slipping on an Acme jetpack and turning up the fuel flow, but in practice, tweaking



your processor's speed is a great way to blow up all your data.

Processors are complicated, delicate components.

Although a chip designer may decide that it's okay to bump up the

clock rate on a processor, the decision is based on many years of experience and backed up by expensive test equipment that can tell if the chip is behaving correctly. When you push a processor too hard, you won't necessarily know when it starts producing errors. Eventually, these mistakes can add up, and your system may become unstable or simply refuse to start. Overdriven chips are also more sensitive to environmental conditions. Your hyped-up Mac may work fine in the cellar in winter, but take it upstairs on a summer's afternoon and you may be in for trouble.

If you're using your upgraded machine strictly for entertainment, you may be comfortable pushing it as hard as possible. However, you should definitely back up your data before you do, and be aware that some manufacturers—such as Mactell and XLR8—void the warranty if your settings are not those they recommend. If your computer is stuffed with essential data though, you probably don't want a system that's running at the bleeding edge. We recommend that you stick with your card's rated speed and leave the DIP switches alone. If you do get a card that lets you alter clock rates, only choose it because it's the best value.

Installation investigation

Upgrade cards can be a dream or a nightmare to install. Newer Technology's MAXpowr cards, for example, sport helpful installation software. In our experience, they generally start up and run smoothly with no intervention required. This is a step up from vendors who simply throw the required extensions on a disk for you to drag to your System Folder.

Unfortunately, the hardware hoops we've had to jump through to get some other cards to work were not so minor. Pulling the L2 cache off the motherboard has been one of our more extreme troubleshooting steps. But XLR8 actually recommends that you pull the L2 cache memory off your system's motherboard when installing one of its range of Mach Speed cards that were current at writing—no casual task for anyone, and a major pain if you own a Power Mac 8500. We've seen cards with misconfigured speed switches, and cards from Mactell and XLR8 that wouldn't work in some systems until we de-interleaved the RAM modules (costing some system performance).

From snail to road runner

So which upgrade card should you buy?

First of all, pick a card that's compatible with your Macintosh. Next, think long and hard about whether upgrading is really the right choice for you.

An upgrade card is a pretty good deal if you own a Power Mac 7500, 8500, or 9500; an early clone from Power Computing or Umax; or a first-generation

Power Mac (the 6100, 7100, or 8100). This is especially true if you've invested a lot in add-ons, such as RAM and hard disks.

If you own a Power Mac 7300 or newer machine it just doesn't make much sense—except in special cases—to shell out good money for a moderate performance gain when you can get that same speed gain (or more) by buying a brand-new G3 Macintosh, the cheapest of which actually cost less than the top-of-the-range upgrade cards.

Before you buy anything, remember that the processor is just one of the components that contribute to your computer's over-all performance. Buying a faster processor almost always gives you a pleasant speed increase, but there are other essentials that can make a big difference too. If your Mac constantly reminds you to close windows and quit applications, you probably need more RAM. If you use certain types of software, such as databases, sufficient storage might be what you lack. If you work with graphics or play lots of games, a graphics accelerator card may do the trick.

PowerPC G3-based upgrade cards are still new and exciting, so you should expect prices to fall as the market stabilises. Even so, if you own an older Macintosh or clone, there are cards with prices that are low enough and specifications that are high enough to warrant serious consideration. After all, Wile E. Coyote was never able to catch Road Runner. When you pop in one of these upgrade cards, he won't be able to catch your old Mac, either. ☺

Systems expert Cameron Crotty <everyman@wenet.net> wrote this article on a Power Mac 7100/80, and he's convinced it's getting slower... by... the... minute.

Get info / locating a G3 upgrade card

The market for G3 upgrade cards is moving rapidly, with faster and cheaper cards coming out every few weeks, along with new cards for Macintosh systems that were previously not supported. Prices range from \$1000 to \$5000.

As with any Macintosh product, the easiest way to buy a G3 upgrade card is through your local Apple-authorised reseller: free-call 1800 025 355 or drop by <www.apple.com.au/wheretobuy.html> to find your nearest. And don't forget to bring a complete description of your Macintosh.

In all likelihood, the cards these vendors offer you will be from the MAXpowr range by Newer Technology <www.newer-tech.com>, the PowerForce range by PowerLogix <www.powerlogix.com> or the Crescendo range from Sonnet Technologies <www.sonnettech.com>.

Resellers obtain their products from distributors, some of whom also sell direct to customers. Australian Newer Technology distributors include Lidcam Technology (03 9820 9077, fax 03 9866 1245) and the third-party products division of Apple Computer Australia (02 9452 8000, fax 02 9452 8160). The PowerLogix cards are distributed in Australia by Music Technology (02 9369 4990, fax 02 9387 8676). MacTherapy (08 9371 5554, fax 08 9371 5561) is Sonnet's Australian distributor.

Any Australian interested in Mactell's PowerJolt or XLR8's Mach Speed range will have to order direct from <www.mactell.com> or <www.xlr8.com> respectively.

Further information on the performance boost achievable with each generation of upgrade cards is available at <www.xlr8yourmac.com>.

— Steven Noble

Design

3D and animated logos



By David Whitbread

Taking your design work into the third and fourth dimensions.

Graphic design has moved into the third and fourth dimensions. Animating previously motionless 2D graphics is now a standard part of a designer's repertoire. Who knows, you could find yourself titling television and video programs, or even in-house training videos. You might end up preparing interactive graphics for web sites, games and multimedia packages, or creating corporate signatures for television, film and internet advertising.

Three dimensionality is also used in the signage industry. In retail outlets, 3D logos are part of many shop fit-outs. And in the merchandising industry, they're used for executive gifts and on the trophies given to reward staff achievement. So, skills in the third dimension have wide applicability.

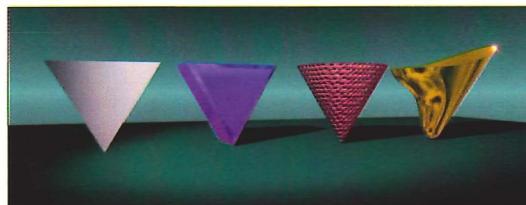
When designing for web sites and CD-ROM, you must consider the form, time and movement of 3D objects. And you must combine them with sound effects and music to use the media effectively. Often you will work with symbols, logos and so on that can work in 2D, and which continue to do so, even though you've been called on to use them in new contexts. If the use of these graphic materials in print is well-established, you will not always have the luxury of redesigning them for these new arenas. So how can you approach 3D and animation in this context?

Dimensionality

One approach to giving a third dimension to a 2D form is to start by extruding it into the third dimension, which creates an object that looks like it has been cut from a slab using a jigsaw. Then, use your imagination to go one better: Look at a 2D triangle and see a 3D cone or half cone. Look at a circle and see a sphere. Look at two concentric circles and see a car tyre, or even a sphere with a crater. Look at a line and see a piece of wire lurching through space, or a thin plane like we imagine Saturn's rings to be.

Once you've added the third dimension to an object, explore animation. Try exploding it into its components, then assembling them or moving them around until they are all in the right position and the logo is readable—like setting up an unruly family for a Christmas portrait for Grandma.

This assembly might be read accurately only from one viewpoint and look quite odd from other positions.



If you are called on to create 3D or animated versions of a triangular corporate logo that has previously been used in 2D only (far left), you might start by extruding it into the third dimension (second from left). A cone is a more imaginative alternative to simple extrusion (second from right), and there's no limit to where your creativity could take you (far right). These images were created in less than 20 minutes using NewTek's mid-range 3D program, Inspire. Like LightWave 3D, which is NewTek's high-end 3D program, NewTek Inspire is distributed in Australia by New Magic <www.newmagic.com.au>.

In your animation, try taking advantage of optical illusions that obscure your logo. Start by placing the viewpoint behind the logo, for example, then move it to the front as if the logo was transparent.

Lighting and texture

Also, since you now have that third dimension, your light source can become dynamic. That is, the light source or sources can move about your shape, casting shadows that highlight its dimensionality.

Light intensity also alters colour perception. You might play with the different colour effects that result from varying the intensity of your light source across the 3D form. An example: bathe your logo in the warmth of a sunset, and then deepen into evening with occasional flashes from shooting stars.

You can also texture-map each piece. Like gift-wrapping, texture-mapping applies a surface—a wood grain, say, or a chrome finish—to an object that has been rendered in three dimensions. With chrome, glass and other reflective finishes, you can distort your backgrounds in the logo.

Moving point of view

You can create an animated sequence by progressively altering your viewpoint. You can zoom in on the object or zoom out. You can pan around it from a set distance, or follow its movement with a tracking shot.

These simple movements can work wonders with a 2D logo: Have it enter and exit a frame. Grow it or shrink it. Make it spin then stop it. Zoom in on a very fine detail, then pull out to get the full logo in frame. Tilt the horizon rather than the logo to make viewers feel like they are moving. Take a low eye level to make your logo look monumental, or fly over it for a bird's-eye view.

Effects

Your 3D object can fade in or out. One object can fade out as the next fades in (this is called a 'cross-fade'). Or, you could smoothly morph one object into another.

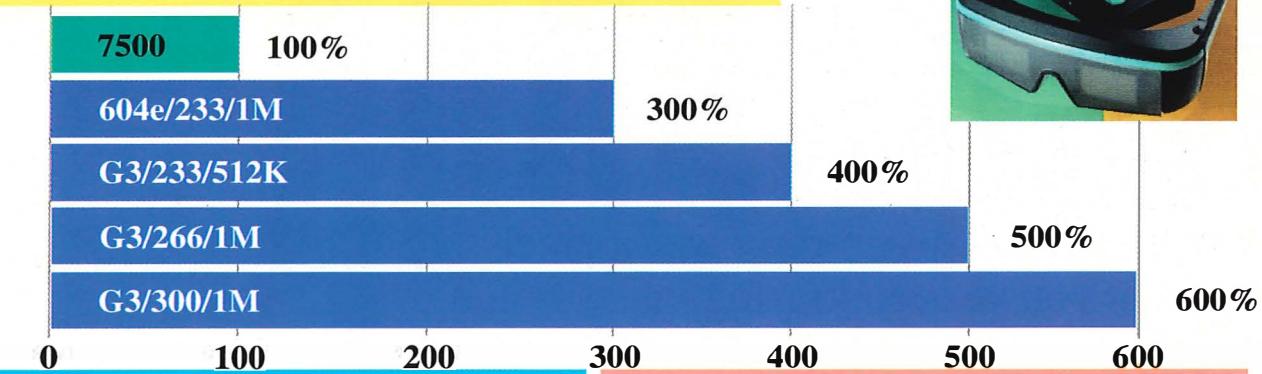
You might ripple or melt your logo or wave it like a flag. Any number of distortion filters can produce interesting effects.

Condensing one part of your logo after another can make it twist and turn. Condense your logo from the top to the bottom to make it look like it's falling backwards, or from left to right to make it turn sideways.

Have a go. Have fun. ☺

David Whitbread is a publications designer and head of graphic design at the University of Canberra. His email address is <dww@design.canberra.edu.au>.

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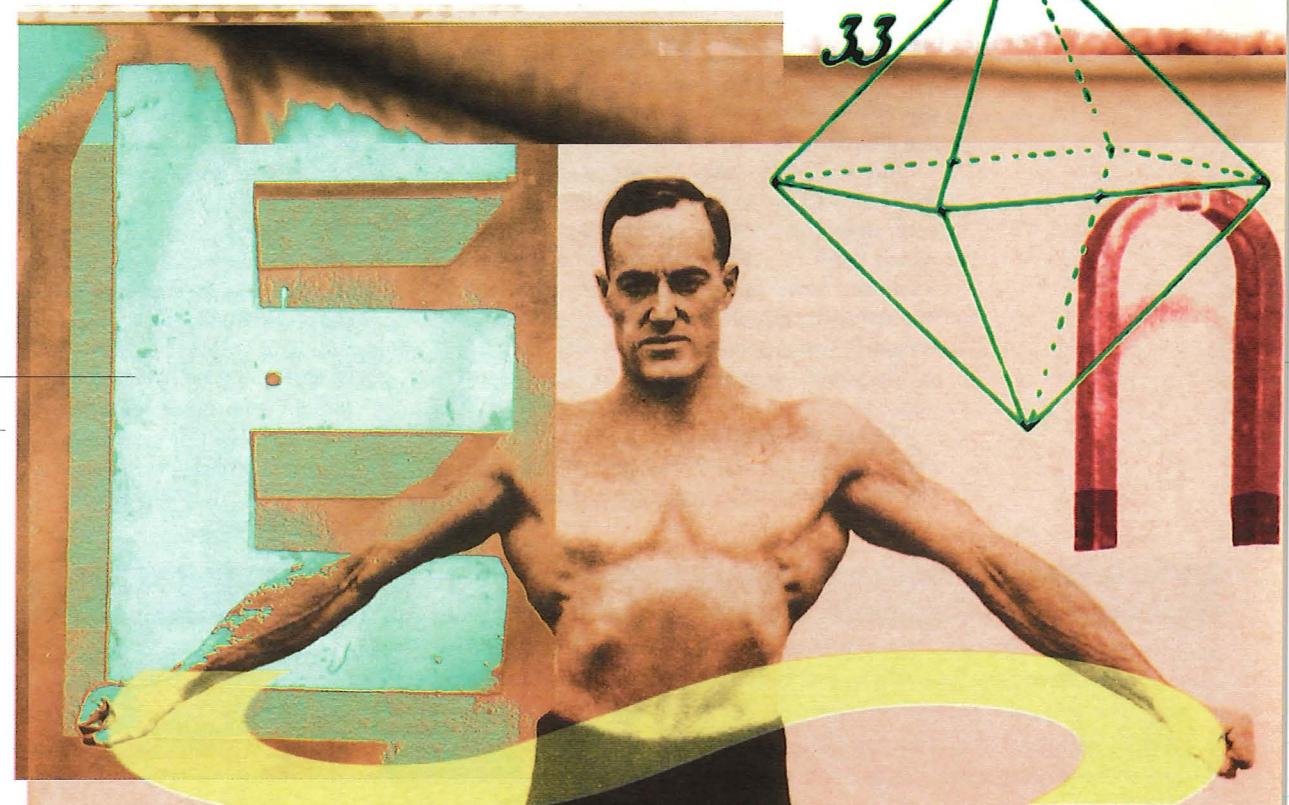
Editable type. Multiple undos. Support for spot-colour separations. If you're one of the thousands of designers who regularly depend on Adobe Photoshop, you've probably hoped for these features for years, and were likely disappointed that none of them arrived with the release of Photoshop 4.0 last year.

To be fair, Photoshop 4.0 did make one big item on my wish list come true: it introduced a caching scheme that accelerated certain kinds of layer operations. But its most significant achievement had almost nothing to do with fulfilling user demands. It was a redesigned interface that brought Photoshop more in line with Illustrator and PageMaker. ▶

5.0 pumps up

by Deke McClelland





Supercharged

ILLUSTRATION: JENNIFER JESSEE

spot color

3

4

5

6

Thankfully, things have just changed. Photoshop 5.0, which is \$1495 RRP from Adobe Systems Australia (1800 065 628, fax 02 9418 8489), offers all the big features that have been conspicuously absent in the past: the type is editable, the undos are multiple, and the colours go beyond CMYK. Compared with previous versions, Photoshop 5.0 is bursting with enhancements that are lavish in their execution. Boasting more new features than any previous upgrade (including the best implementation of multiple undos I've ever seen), Photoshop 5.0 is the model by which future upgrades will be judged. Few artists—even those who are stuck with version 3.0—can afford to ignore it.

But while Photoshop 5.0 is powerful, it's by no means easy to use. In fact, at first a few elements may seem downright hostile. One feature in particular, which seeks to achieve consistent colour between monitors, ranks among Photoshop's most complex and intrusive capabilities. By default, Photoshop will change the colours in your images—frequently for the worse—without so much as consulting you.

To avoid potential pitfalls like these, you need to plan ahead, and that's just what this expert guide is all

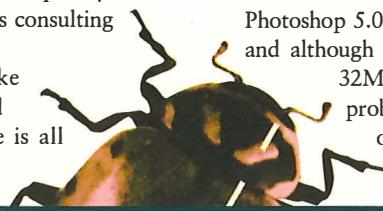
about. I've spent several months examining beta versions of the new Photoshop to uncover its most critical features and unravel its most demanding operations. I've also put together an extensive list of new keyboard shortcuts to help you hit the ground running. Photoshop 5.0 is sufficiently tricky that some artists will be tempted to write it off as a cruel joke. But I hope that with the proper introduction, you'll come to appreciate it as the splendid upgrade it is.

Worry-free editing

If one single feature defines Photoshop 5.0, it has to be the History palette. Used at its most basic level, the History palette satisfies an often-voiced demand for multiple undos in Photoshop. You can back-step and forward-step as many as 99 operations (20 by default), even after saving or printing the file.

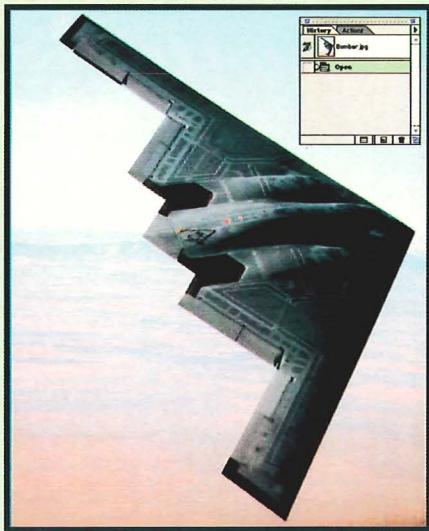
For years, Adobe's spokespeople have warned that adding multiple undos to an image editor would greatly increase its RAM requirements. They weren't kidding.

Photoshop 5.0 only runs on PowerPC-based Macs, and although Adobe recommends a minimum of 32MB of system memory for it, you'll probably need 64MB to get the most out of multiple undos.

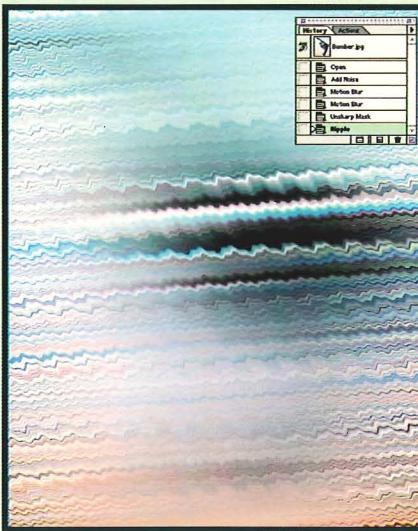


Painting with time / the History palette

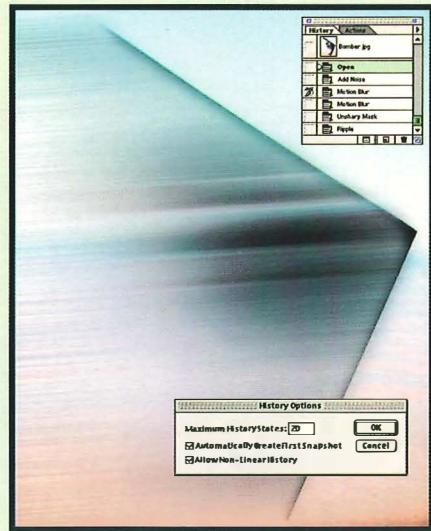
If the advent of independent layers opened up the third dimension in Photoshop, then the History palette lets you enter the fourth—by literally travelling backward and forward in time. As with any program that offers multiple undos, you can edit an image without worrying about making an irreversible mistake. But even more important, you can experiment with alternative futures and blend these futures with the present. The History palette temporarily records your operations as independent states that you can retrieve at will during your work session. You can even merge one state with another by option-dragging with the eraser or by painting with the new history brush.



A I started with a photograph of the B-2 bomber from the Digital Stock image library. The bomber looked pretty nifty hovering in the air like that, but it was a little static for my taste. I reckoned it'd look better buzzing by at a million miles an hour in a gush of flames, like a prop from *Independence Day*.



B To create the raw materials for my motion trails, I applied a series of filters. First I added some noise to give the image grit. Then I applied two passes of the Motion Blur filter. Finally, I sharpened the blur to accentuate the stripes of colour and used the Ripple filter to give the stripes a bit of wave. The effects were interesting, but they obliterated the bomber.



C After selecting the Allow Non-Linear History option (to save the filtered states even if I decided to undo them), I reverted the image to its original state by clicking on the Open item in the History palette. After selecting the second Motion Blur state as the source, I used the history brush to paint in the filtered effects to create a unidirectional motion trail.

Despite its RAM gluttony, I'm satisfied that the undos are handled as efficiently as possible. Like MetaCreations' Painter 3.1—which introduced multiple undos in image editors three years ago—Photoshop buffers just those portions of the image that are affected by an operation. A small brushstroke takes less of a hit than a filter applied to the entire image. And, of course, you can always turn off the multiple undos feature.

Full-tilt time travelling

The History palette goes well beyond simple backstepping—its versatility ultimately distinguishes Photoshop 5.0 as the best digital undoer. Every buffered operation is itemised as an independent state, so reverting to a previous state is simple: just click on it, and bang, you're there.

Photoshop manages a separate set of states for each open image. By default, you can perform 20 operations in one image, switch to another image for a few hours, then return to the first, and still have access to all of that image's undos. Even better, you can specify which states you want Photoshop to remember—just because you've set 20 as the number of states to be monitored doesn't mean they have to be the 20 most recent states.

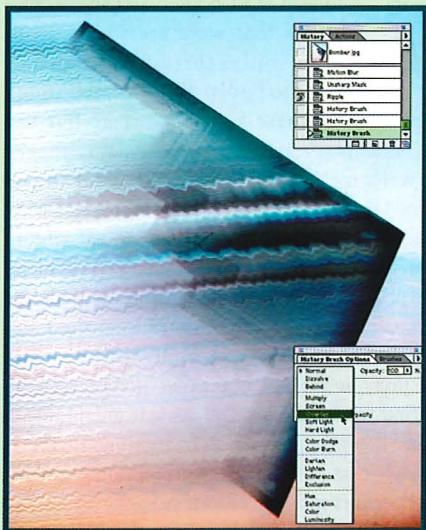
Suppose you paint a series of brushstrokes. When you finish, the History palette lists six Paintbrush states. To you, it felt like one set of brushstrokes—you plan to either keep them all or undo them all in one fell swoop. By deleting all but the final Paintbrush state, you ensure that other, more important operations don't get squeezed out of the history buffer as you continue to edit.

You can also save key states as snapshots, which remain buffered as long as the image is open, regardless of how many states Photoshop is set to remember. If the state seems crucial, you can save it to disk for long-term retrieval.

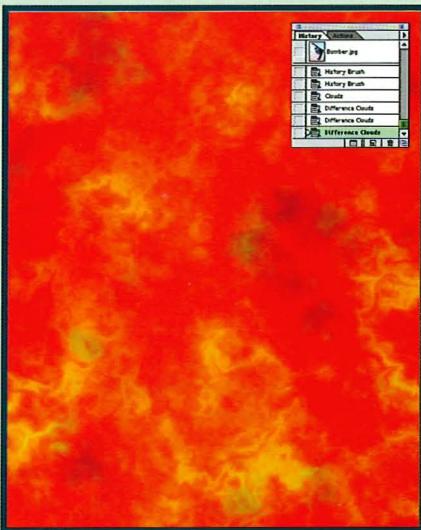
The single-step Undo/Redo command functions independently of the History palette. This means you can undo changes made inside the History palette. Delete a state that you shouldn't have? Just press ⌘-Z . Want to flash forward and backward between states? Press ⌘-Z . You always have a safety net.

Combining past and future

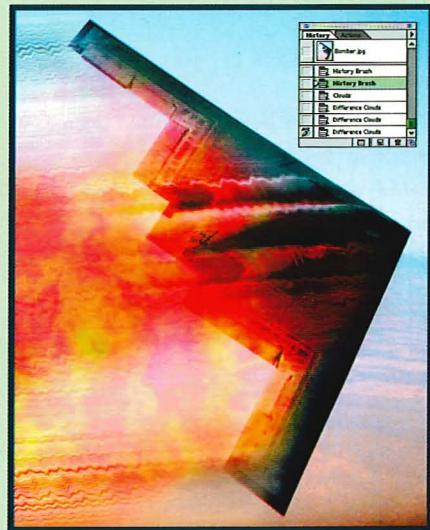
If this were all there was, Photoshop 5.0's undo model would be a generation ahead of any other previously available. But the program offers two additional features that transform the History palette from a top-notch convenience feature into a solid production tool.



D The history brush also permits you to apply one state to another using blend modes. I selected the Ripple state as the source for the history brush and painted it into the current state using the Overlay mode. Then I set the source state to the original Open state and brushed that into the current state containing the previous brushed-in effects using Multiply. The result is a rushing effect that enhances the bomber without annihilating it.



E But a fast bomber wasn't enough; it needed to be fiery as well. To make the fire, I set the foreground and background colours to red and yellow, respectively, and applied the Clouds filter. Then I chose Difference Clouds three times to round out the billowy flames.



F Even more than the previous filters, Clouds and Difference Clouds drowned out the bomber. So I used ⌘-option-Z to back-step to the state just before Clouds. Then I selected the final Difference Clouds state as the source for the history brush and painted in the fire.

The timeline of the History palette

The History palette lets you plan a network of possible futures. It's like standing at a fork in the road with the option of going in all directions at once. In my case the road forked in two directions, the Motion Blur experiment in one and the Clouds effects in the other. No other program lets you paint with time in such a dynamic and satisfying manner.

Fast fingers / navigating the new keyboard shortcuts

Photoshop has long offered hundreds of shortcuts for activating tools and choosing commands from the keyboard, most of which translate seamlessly between the Mac and Windows. This table lists 30 key operations that Adobe has added or changed in Photoshop 5. If an item in the middle column includes an asterisk (*), then the shortcut produces the same effect as it did in Photoshop 4—the new way is merely an alternative. Otherwise, the old shortcut produces a different effect, and you should use the shortcut in the right-hand column.

Operation	Old Photoshop 4 shortcut	New Photoshop 5 shortcut
Hide or display menu bar when viewing image in full-screen mode	none	shift-F
Scroll image left or right in window	none	⌘-shift-page up or ⌘-shift-page down
Switch between rectangular and elliptical marquee tools	press M	shift-M
Select arrow (path selection) tool	press P	press A
Select airbrush tool	press A	press J
Create new layer	click on page icon in Layers palette*	⌘-shift-N
Clone layer as you move it	none	⌘-option-drag outside selection with any tool
Edit text layer	none	click on letter with type tool
Increase or decrease size of selected text	none	⌘-shift-> or ⌘-shift-<
Expand or tighten tracking/kerning	none	option-right arrow or option-left arrow
Align text left, centre, or right	none	⌘-shift-L, ⌘-shift-C, or ⌘-shift-R
Exit type dialogue box	press enter on keypad*	⌘-return
Restore last selection	none	⌘-shift-D
Feather selection	⌘-shift-D	⌘-option-D
Replay last transformation	none	⌘-shift-T
Change opacity of floating selection	press number key	⌘-shift-F, then enter new Opacity value
Select measure tool	none	press U
Select smudge tool	press U	shift-R
Measure angle between lines (protractor function)	none	option-drag end of line with measure tool
Select Multiply or Screen	none	shift-option-M or shift-option-S
Restore Normal blend mode	none	shift-option-N
Cycle forward or backward through blend modes	none	shift-plus (+) or shift-minus (-)
Select colour sample tool	none	shift-I
Create fixed colour target when working in dialogue box	none	shift-click in image window
Delete fixed colour target	none	option-click on target with colour sample tool
Create new spot-colour channel in Channels palette	none	⌘-click on page icon
Undo or redo operations beyond last one	none	⌘-option-Z or ⌘-shift-Z
Select history brush	none	press Y
Select pencil tool	press Y	press N
Revert selection to source state in History palette	none	⌘-option-delete

The new History brush permits you to paint from any state listed in the History palette (provided the state contains the same number of pixels). So even if you rack up a series of mistakes, you can easily erase them away in one operation—without saving the image or taking snapshots, as you had to in the past.

The Allow Non-Linear History option is the History palette's crowning touch. Just because you undo a state and go off in a different direction doesn't mean the undone state must drop out of the buffer. By merely checking a box, you can preserve it for later retrieval—which gives you the freedom to experiment with multiple future scenarios and then paint them back in with the history brush.

The History palette has just one limitation. It buffers operations throughout a single session only. If you quit or crash, all states but the saved one are lost. While this is true for the undo command in any application, the general excellence of the History palette encourages you to expect more. I can't tell you how many times I've wished I could save the contents of the undo buffer to disk, just in case.

Text and effects layers

While the History palette is a hard act to follow, Photoshop 5.0 manages to round out its considerable supply of elastic editing capabilities with a revamped type tool and a collection of numeric layer effects—features that were previously available only through Extensis's PhotoTools plug-ins. Although neither of these functions is as flat-out exemplary as the History palette, they're welcome additions and are better implementations than those of their plug-in predecessors.

Photoshop saves editable type as a special kind of layer. You can change the layer's opacity or blend mode, add it to a clipping group, rotate or scale the text, and apply layer effects without losing the text's editability. But if you want to apply a filter, paint inside the text, or make some other pixel-level edit, you must first render the type, making it uneditable.

You can also mix and match formatting attributes within a single text layer. The one exception is colour; Photoshop permits just one colour per text layer. You can edit text as easily as clicking on a letter with the type tool. Photoshop 5.0 supports manual pair kerning, and it subscribes to the standard formatting shortcuts made familiar by Adobe's object-oriented products, Illustrator and PageMaker.

Many users had hoped Photoshop would implement an object-oriented text layer with type on a path and other Illustrator-like functions. But type in 5.0 remains forever bitmapped, and you still have to edit it inside a dialogue box. Also, Photoshop still has no understanding of column width, so—just as in previous versions—you must press the return key to wrap a word down to the next line.

You can apply effects such as drop shadows, glows, and bevelled edges to layers by entering values into dialogue boxes. While layer effects don't entirely



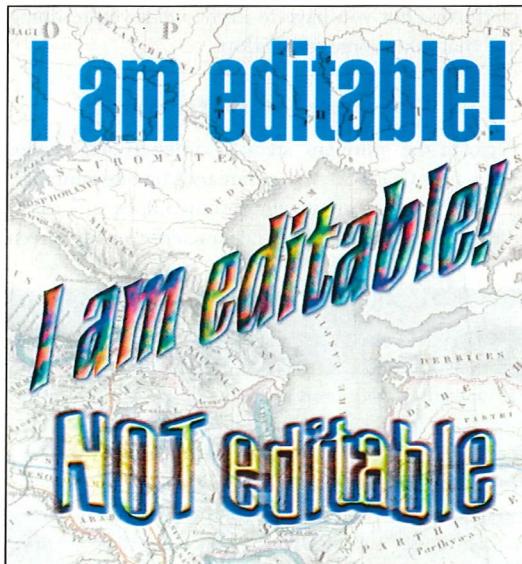
eliminate the need to create manual drop shadows and the like, they offer plenty of advantages. The effect automatically conforms to the shape of the image on the layer, so if you edit or transform the image, Photoshop modifies the effect to match. It also calculates the effect on the fly, so you can edit it indefinitely, plus it consumes very little memory. And you can copy an effect from one layer and paste it onto several other layers simultaneously.

Experts will surely pooh-pooh this feature as one geared toward beginners, but I have no doubt that, over time, layer effects will catch on with a vengeance.

Colour management

The new feature that's liable to give experienced Photoshop artists the most trouble is colour management. I had been using a beta version of Photoshop 5.0 for a week before I grasped the meaning of the simple message "Converting colors" that appeared every time I opened an image: the program was rewriting the colours of my pixels and had been doing so for several days. As a result, I enjoyed the dubious pleasure of having to revisit several of my images and fix them.

Adobe's intentions are commendable. The program is trying to convert RGB and greyscale images created on a foreign system so that they display accurately on yours. But the conversion works only if your monitor is properly calibrated, the image contains a



Editable text is surprisingly versatile in Photoshop 5.0. Here, I changed the blend mode to Multiply (top) and applied a clipping group and bevel effect (middle) without affecting editability. But before I could paint and apply various filters (bottom), including Median, Wave, and Gaussian Blur, I had to render the text to a standard layer.

profile for the source monitor, and the source monitor itself was properly calibrated. That's a lot of improbable conditions for a feature that works without securing your consent.

While the default settings are highly suspect, the concept and general implementation are excellent. When used properly, Photoshop 5.0 does a far better job than its predecessor of maintaining consistent colours from one screen to the next and even across

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platforms. But you have to know what you're doing, and that takes some extra effort.

Three steps to better colour

Perform the following steps in order to get version 5.0's new Color Settings commands up and running:

First, before running Photoshop 5.0, be sure to calibrate, or at the very least 'characterise', your screen.

Fishing for features / intelligently defined layer effects

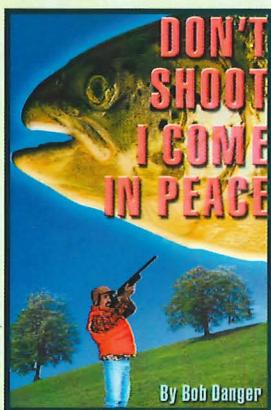
Normally, I'm not one to get worked up over drop shadows, glows, and bevelled edges, particularly when they're the subject of automated effects. Virtually every two-bit image editor on the planet offers a drop-shadow command—and they're typically bare-bones implementations with few fine-tuning controls and little attention to detail or usability. In fact, Photoshop 5.0's layer effects are the first such tools I've ever had any inclination to use. And they're every bit as practical as they are fun to play with.



A Photoshop's layer effects are layer-dependent, so naturally you have to start off by assembling a layered composition. In creating a book jacket for a story about a dread monster from outer space, I kept my composition simple: a sparse background, an intrepid hunter on one layer, and the invading monster (one colossal yellow fish) on another. But while the monster was clearly dramatic, he didn't quite project the luminous, haunting visage I was looking for. It was an obvious job for layer effects.

B I control-clicked on the Big Fish layer to bring up a pop-up menu of layer-specific operations.

From these, I chose the Effects command. Photoshop displayed a huge dialogue box with five categories of effects that provided me with access to a variety of shadows, glows, and bevelled edges. I applied a blue glow around the outside of the fish along with a thick, bevelled perimeter. The result was a monster with more presence, a fish that looked as if it might actually be larger than life.



C My favourite feature of layer effects is that you can transfer them between layers. After creating the title text for my book, I copied the glow and bevel effects from the Big Fish layer and pasted them onto the text layer. The glow didn't really make sense for the title, so I pressed option and chose the Outer Glow command to disable that effect. Then I edited the bevel to better fit the letters.

If you own a monitor such as the Radius PressView 21SR or the Mitsubishi SpectraVision 1000, then you can calibrate it using the hardware and software included with the device. Otherwise, you may have to settle for characterising your screen—that is, merely describing its capabilities and limitations without compensating for them—using the redesigned and straightforward Gamma wizard included with Photoshop. Either way, you get a ColorSync-compatible ICC profile of your monitor that Photoshop 5.0 loads during start-up.

Next, select an ideal RGB environment. Because Photoshop 5.0 lets you define a monitor-independent RGB workspace, you can preview how an image will look on a different screen. But the real purpose for

selecting an RGB environment is to permit Photoshop to perform its colour calculations unconstrained by the limitations of your particular monitor. That's why experts have given a thumbs-down to Adobe's choice of the Microsoft-blessed sRGB as the program's default setting.

Although great for previewing a web image on a typical PC screen, sRGB is terrible for pre-press professionals, since it restricts Photoshop's colour-calculating capabilities. While the jury is out on precisely which setting you should use, ColorMatch RGB (based on a typical PressView monitor) or SMPTE-240M (the HDTV standard) look like your best bets.

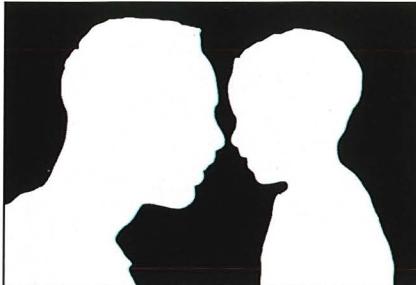
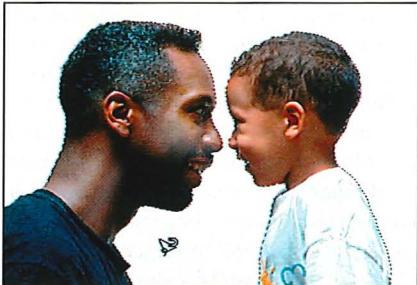
Last, the most imperative step—telling Photoshop to ask you before making any conversion. Choose the Profile Setup command and set the three Profile Mismatch Handling options to Ask When Opening. Now, when Photoshop detects a file that it believes was created on a different system (or in a different RGB workspace), an alert message will appear asking whether or not you want to convert the image. This puts the control back in your hands—right where it should be.

The wonderful thing about using a screen-independent RGB space like SMPTE-240M is that it means you can share an RGB image with another Photoshop 5.0 user and be confident that your image will look roughly the same on the foreign monitor as it does on yours. (In the past, only the Lab and CMYK colour models have offered such assurance.)

In a perfect world—where everyone used Photoshop 5.0 correctly—you'd be able to send an RGB image to your commercial print house and let the technician decide which CMYK settings will produce the best separations. On the other hand, if you're concerned that your printer doesn't properly understand Photoshop 5.0, then you can submit CMYK or Lab images, just as in the old days.

Spot colours and indexing

Photoshop 5.0's new spot-colour capabilities are likely to generate a lot of interest, even though they're addressed in the most elementary fashion possible. You add an alpha channel, assign a Pantone colour or the like, and modify the ink's solidity to produce a reasonable facsimile of the printed image on screen.



If an image stands out clearly from its background, then it's easier to select it with the magnetic lasso than with any other tool (left). As you can see by the mask version of the selection (middle) and the final composite (right), the selection isn't perfect. But considering that it took me about 30 seconds to draw, it's not bad.

Then you export the image as a DCS 2.0 file and import it into your publishing program. But while the implementation is hardly what I'd call robust—Photoshop 5.0 doesn't do knockouts, nor does it support metallic or Day-Glo inks—it gets the job done.

Photoshop 5.0's best colour refinements are its most subtle. You can now target ranges of colour with more precision inside the Hue/Saturation and Curves dialogue boxes. And Curves lets you make numerical changes. All that's needed now is a dynamic histogram inside the Curves dialogue box, and you never need visit Levels again. The new colour-sample tool lets pre-press technicians set as many as four fixed colour targets inside an image and monitor these points from the Info palette. You can even set and move targets when a dialogue box is open.

Best of all, the Indexed Color dialogue box previews its settings in the image window, so you can see what your GIF image will look like before you apply a bit depth. It won't make professional web designers banish their libraries of plug-ins—although new applications like Adobe's ImageReady and Macromedia's Fireworks might—but it's enough to satisfy weekend web artists like me.

Select, layer, transform

Adobe has made literally hundreds of little changes to Photoshop's selection, layering, and transformation capabilities. The most prominent among these are the new magnetic lasso and magnetic pen tools, which automatically trace the edges of a clearly defined foreground image. After clicking with one of these tools, you have

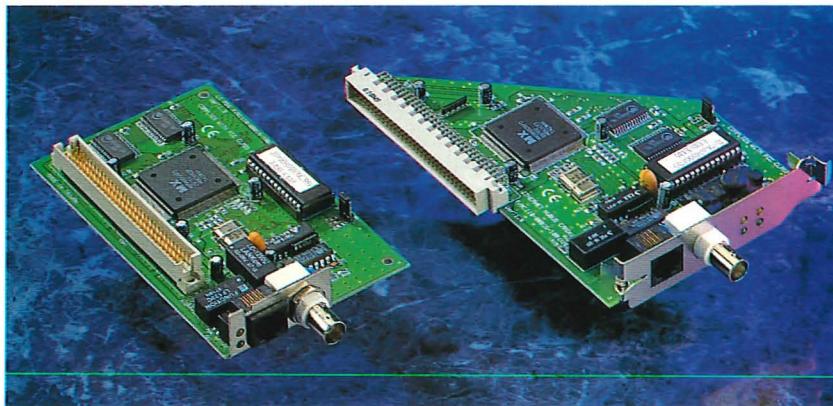
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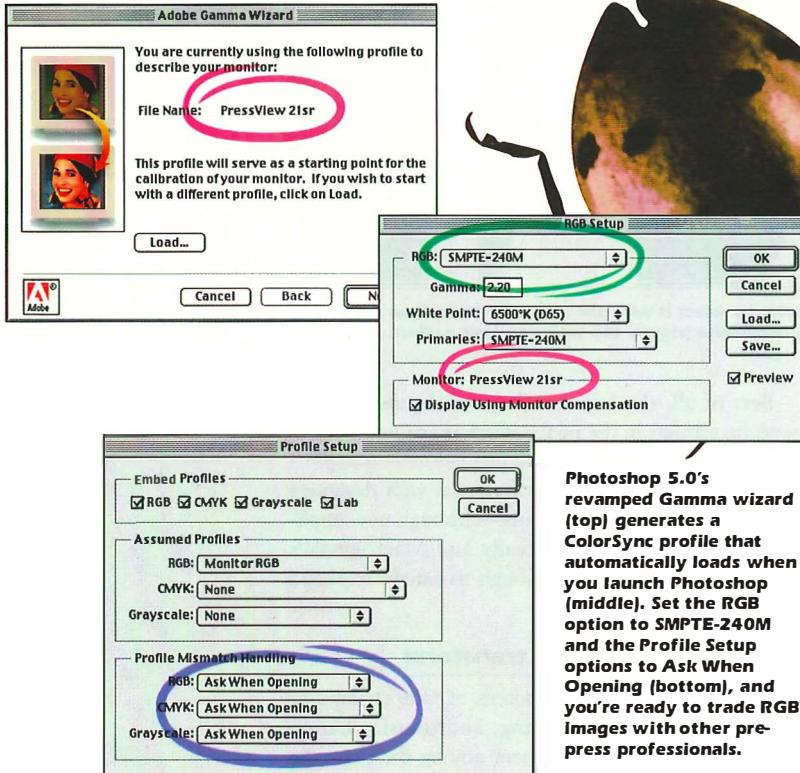
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Photoshop 5.0's revamped Gamma wizard (top) generates a ColorSync profile that automatically loads when you launch Photoshop (middle). Set the RGB option to SMPTE-240M and the Profile Setup options to Ask When Opening (bottom), and you're ready to trade RGB images with other pre-press professionals.

only to move the cursor (with the mouse button up) around the image you want to select. You can adjust the range of the tool on the fly by pressing the bracket keys ([and]), which comes in handy when selecting inside crevices and around sharp corners. The magnetic tools aren't miracle workers, but for those more concerned with speedy results, they do an adequate job.

The other new additions might not qualify as earth-shattering, but often it's the small improvements that make the biggest difference in how well an application suits your needs. In fact, I'm willing to bet that as you read through the following list, you'll discover at least three features that have been on your top-ten wish list for the last few years:

You can now restore the most recent selection outline by pressing ⌘-shift-D . Personally, I've been surprised at how often this comes in handy. I tend to select the same area over and over, and I'll bet you do, too.

For selections and paths, the Transform command now lets you rotate, scale, or skew a selection outline independently of an image. You can likewise transform whole paths, multiple paths, or a handful of selected points, just as in Illustrator.

You can now move the centre of a transformation simply by dragging it. This is essential when performing precise rotations.

After rotating or scaling a layer, you now just press ⌘-shift-T to repeat that same transformation on another layer. You can also repeat a transformation that was last applied to a path or selection outline.

Photoshop now automatically aligns and distributes (evenly spaces) layers, whether the layers contain text or image elements. Just link the layers you want to modify and choose the desired command. When you're aligning, the active layer anchors the alignment.

Ever since the Info palette was first introduced, folks have been measuring distances and angles by drawing invisible lines with the line tool.

Now Photoshop gives you a dedicated Measure tool designed for this purpose.

Measurement lines remain intact throughout a session in case you want to revisit them. Option-drag the end of a line to extract a second 'protractor' segment, which is useful for gauging the angle of crooked scans and for slanting image elements.

As anyone familiar with Live Picture knows, Photoshop could use better warping functions. A new filter called 3D Transform wraps images around three-dimensional primitives such as spheres, cones, and cubes. While the filter lacks lighting capabilities—which diminishes its value as a 3D imaging tool—it serves quite nicely for creating bumps, twists, and other warping effects.

The bottom line

Frankly, I hold Photoshop to a tougher standard than other software. Certainly, Macromedia FreeHand, Painter, and a half dozen other top-flight applications provide essential functions to the graphic arts community. But I know of no other application that would leave such a gaping hole if it were to disappear. Entire industries have become dependent on Photoshop, and thousands of artists use the program every working day of their lives.

So it's not enough for Photoshop to be a good program. It has to be outstanding merely to satisfy the daily needs of its demanding audience.

But even when measured by a different yardstick than the rest of the pack, Photoshop 5.0 is something special. Three radical enhancements—the History palette, editable text, and profile-based colour management—easily make it more essential than version 3.0 (hailed for its introduction of layers) was in its time. Add to those, spot-colour separations, layer effects, improved colour indexing, path transformations, magnetic selection tools, and a wealth of new shortcuts, and you have what I consider to be one of the most significant upgrades in the history of the Mac.

Perhaps the greatest indication of the sheer breadth of this revision is that I've left out several features for lack of space, including additional gradient styles, a more sensitive Actions palette, a freehand path tool, better support for 48-bit images, and new file-saving options for web and cross-platform users.

If you skipped Photoshop 4.0, you now have a compelling reason to adapt to the new interface. And if you already use version 4, there isn't a reason on earth not to upgrade. The revised Color Settings commands may trip you up a bit at first, but otherwise it's all smooth sailing. Photoshop 5.0 is simply the best. ☺

Deke McClelland is the author of Macworld Photoshop 5.0 Bible and the upcoming Photoshop 5.0 Studio Secrets (both IDG Books Worldwide, 1998). You can visit his web site at <www.dekemc.com>.

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**Adobe and
Macromedia
come to WEB
artists' rescue
at last.**

BY JASON SNELL

lensch Web design's new **Dynamic Duo**

The web may not be the rough-and-tumble frontier it once was, but you wouldn't know that by looking at a web designer's toolbox. Web-site designers still rely on a mishmash of programs to create the billions of GIF and JPEG images that make the web worth seeing. Sure, Adobe Photoshop lets you touch up graphics and create text, but by itself, it's no web-production powerhouse. Designers augment it with a slew of stand-alone programs, plug-ins, and shareware just to do daily tasks.

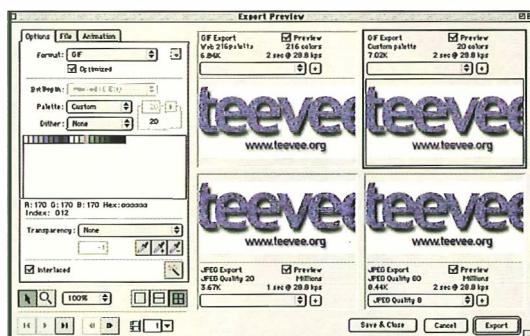
Web designers have been waiting for a tool that combines the image-editing power of Photoshop with features that address the unique needs of graphics destined for the web. Their wish may have finally come true. Two superheroes of the graphics-software world, Adobe www.adobe.com and Macromedia www.macromedia.com, have announced all-in-one web-graphics packages—Adobe's ImageReady and Macromedia's Fireworks. The programs were still in beta testing when we took them for a test run, but they were complete enough to show us that the days of creating web graphics on a wing and a prayer are over. Firmware Design (02 4721 7211, fax 02 4721 7215) hopes to be distributing Fireworks in Australia for \$549 RRP by the time you read this, while Adobe (1800 065 628, fax 02 9418 8489) says ImageReady will become available this month for \$469 RRP.

Different strokes

Whether you create images yourself or get them from an art department, all graphics must be specially prepared for the web. Photoshop is the standard for image manipulation, so it's no surprise that ImageReady and Fireworks both bear it a striking resemblance. ImageReady offers a slimmed-down version of Photoshop's toolbox (the airbrush and clone tools are missing, among others), and comes complete with familiar Photoshop-style floating palettes. Fireworks provides a similar toolbox and a series of floating palettes.

Beneath the interfaces' surfaces, however, you'll find some fundamental differences. For instance, both programs let you use brush effects, such as a paintbrush or pencil, but with Fireworks you don't paint with a Photoshop-style spattering of pixels. Instead, effects are contained in editable Bézier curves, just like the curves you create with an illustration program such as Macromedia FreeHand.

Drawing paint strokes that are actually paths will seem strange to long-time Photoshop junkies, but there's a distinct advantage: paths are editable. That means you can go back later and change any attributes of the stroke, such as its colour or texture. ImageReady, in contrast, works just like Photoshop does—when you paint, you're essentially brushing on permanent pixels.



Say good-bye to guessing which file format and compression scheme will make your graphic look its best. Fireworks allows you to compare the image quality and file size of up to four versions side by side.

These different approaches can be traced back to the two programs' roots. ImageReady's features reflect a close connection to Photoshop. (Keyboard shortcuts are the same, and the proprietary Photoshop format is its default file format.) On the other hand, Fireworks was made by the programmers who wrote FreeHand. Photoshop users will probably feel more comfortable using ImageReady.

Ready for the web

Paint and touch-up features are vital elements of any image-editing program, but they're not what will make Fireworks and ImageReady must-have tools. What will are the features that help web designers do the nitty-gritty work of optimising images for display in a web browser.

The trickiest part of preparing an image for the web is preserving its quality while saving it in a format (traditionally GIF or JPEG) supported by a web browser. GIF images contain only up to 256 colours, and each colour used adds to the file's size, so it's

important to create a palette that's both accurate and small. JPEG images can be saved at various levels of compression, but you must trade image quality for increased file-size savings. Both ImageReady and Fireworks can help designers figure out which trade-offs they're willing to make.

To help you make those decisions wisely, ImageReady lets you switch between the editable version of your image and a preview of what it'll actually look like on the web. To see the before and after versions, you simply flip between the Original and Optimized tabs of the image window. As you alter an image's characteristics, a single click lets you see how your new settings affect the image's quality and file size. You can compare the results of multiple settings possibilities only by duplicating the image. Menu commands also let you view what your image will look like on a PC monitor and when dithered by a browser.

ImageReady also gives you supreme control over an image's colour palette—a helpful feature if you're carefully editing a GIF image that contains few colours. You can replace one colour with another or even shift colours selectively (mixing, for example, colours from the web-safe palette with others from an adaptive palette). This will be satisfying if you want to eke out every last byte of file-size savings, but for many web-graphics creators, it's probably overkill.

Fireworks handles the process of putting files in web-ready formats differently. Instead of before and after views of your image, when you choose Export from the File menu, a window pops up that lets you quickly view the results of up to four possible ways of saving your file. By eyeballing all these export-format

Feature Face-off / how ImageReady and Fireworks compare

Feature set	Adobe ImageReady	Macromedia Fireworks
Image-editing tools	All tools are pixel-based: paintbrush, pencil, and eraser.	Tools are vector-based by default: paintbrush, pencil, airbrush, rubber stamp, eraser, <i>bézier</i> pen.
Special image-editing effects	no	Brush paths can be edited. Can paint with textures, such as sand.
Supports Photoshop plug-ins	yes	yes
Supports layers	yes	yes
Text remains editable	yes	yes
Text can be placed on a path	no	yes
Text preview options	Live preview within image window.	Previews available within image window or a text dialogue box.
Special text options	no	Special effects applied to text (such as a drop shadow) remain applied even after text is edited.
Export preview options	Previews 'before' and 'after' of one image-setting possibility. You can preview more only by copying image.	Previews as many as four image-setting possibilities simultaneously.
Special export preview options	Can toggle between PC and Mac monitor gammas; can preview browser dithering.	no
Can save export settings	yes	yes
Allows direct editing of GIF colour palettes	Can mix adaptive and web palettes; can add and subtract individual colours.	no
Tweening animation tool	yes	no
Support for JavaScript-based rollover effects	no	yes
Batch-processing capabilities	Available from within application; can also create 'droplets' for batch processing from the desktop; no AppleScript support.	Available from within application; no AppleScript support.
Image-map support	yes	yes
Multiple undos	yes	yes
Can import and export layered Photoshop files	yes	Import only.

scenarios at once, you can directly compare file sizes and image quality to choose the settings that strike the best balance.

Both programs offer file-export options far beyond what's been readily available to designers. Besides their powerful features for creating GIF and JPEG files, they also open Photoshop, TIFF, PICT, and most other common image-file formats and can export files in PNG—a flexible image format that's gaining popularity on the web. Unfortunately, Fireworks can't save files in Photoshop format.

Although ImageReady's file-export features are a big improvement over those in Photoshop 4, and although ImageReady offers finer control of colour palettes, Fireworks' ability to preview the results of several export settings simultaneously will probably pack the widest appeal.

Letter-perfect text

One of the biggest bugaboos of web graphics has been creating and re-creating text, *ad infinitum*. Photoshop automatically rasterises text into pixels, thus making the letters uneditable. If you misspell your company logo, you must remake everything from scratch, trying all the while to match your original font, point size, and styling. Photoshop 5 remedies many of these problems by finally making text editable, but whether or not you're rushing to upgrade, you'll be glad to know that Fireworks and ImageReady also offer this attractive capability.

Both programs let you edit text, and both update your text in the image itself as you type, giving you immediate feedback. Unlike ImageReady, Fireworks allows you to apply different font styles to individual letters in a text block.

Fireworks offers one unique text feature: special effects (such as glows and drop shadows) that remain linked to blocks of text even after you edit the text. In ImageReady—and Photoshop, for that matter—you must rasterise text, making it uneditable, before you can apply an effect. If you change the text, the effect is lost. To get the same look, you must remember which type settings you used and repeat the whole process. Fireworks saves you the pain of such labours. Fireworks also lets you attach text to any path, letting you quickly flow text across free-form curves. ImageReady creates text that can run only on a straight line.

When it comes to text tools, Fireworks appears to have a clear advantage over ImageReady, but both tools offer features that web authors would have killed for before the release of Photoshop 5.0.

Look alive

If you've ever tried to use Photoshop as a GIF-animation tool, the animation features in these programs may make you jump for joy. The applications' different approaches make each one better suited for specific types of animation.

Drawing on its Photoshop heritage, ImageReady treats layers as sacred, even across different frames of an animation. For example, when you create a multi-object, multiframe animation, a change you make to one layer will automatically carry over to that layer's

counterpart in all other frames. This is a big time-saver if, for example, your company's marketing department decides that your animated text logo should be blue and not red—you won't have to correct every frame.

If you create animations that involve static images fading in and out or moving around, you can also use ImageReady to automatically make an entire animation through tweening—generating all the frames in between 'before' and 'after' frames.

Fireworks' animation features are more basic. The program doesn't offer any tweening or other special animation features, so simple fade and movement effects will take more time to create. However, it may be more appropriate for people who create animations with multiple cels.

Although Fireworks stumbles with complex animation, the program outdoes ImageReady when it comes to support for one hot web-design technique—image rollovers. Rollover effects, such as a button that changes when viewers move their cursors over it, are a common device for providing feedback and animation on a page.

To create this effect in Fireworks, you simply make the original button in one frame and the version that appears when a cursor passes over it in the next frame. Fireworks' ability to apply effects directly to objects (including editable text) makes the program ideal for creating subtle rollover effects quickly. When you're finished, you export your image as a button. Fireworks automatically generates image files for each button state and writes code to create the rollover effect.

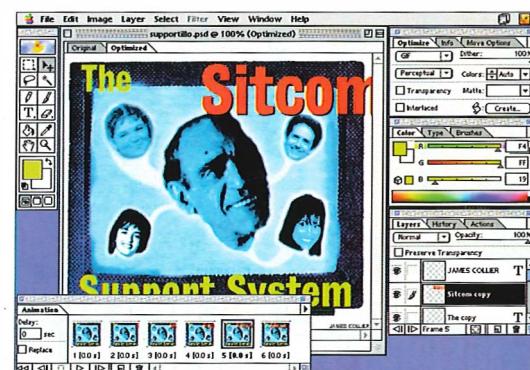
There's no clear winner between these two programs when it comes to dynamic effects.

The bottom line

Fireworks and ImageReady offer impressive feature sets, but it's still too early to tell which will dominate the field. If you're comfortable using path-based drawing tools and you work a lot with text, Fireworks will have a clear edge. If you're more comfortable with the traditional feel of Photoshop and spend a lot of time creating web animations or perfecting colour palettes, ImageReady will be hard to beat.

Whichever tool comes out on top, the clear winners are web designers themselves. For too long, they've had to jump through hoops because nobody had written a graphics program just for them. With the introduction of Fireworks and ImageReady, those days are over. ☺

Jason Snell has edited hundreds of GIF and JPEG files since he began creating web sites in late 1993.



ImageReady's Tween command gives you the ability to quickly generate animations. All you have to do is make 'before' and 'after' frames, and ImageReady will automatically create all the frames in between.

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Back in its heyday, the PowerBook epitomised the best of all things Macintosh: ease of use, innovation, and that certain *je ne sais quoi* not found anywhere else. But over time, poor design and reliability issues caused the once-mighty mobile Mac to fall from its lofty heights.

It's been a long climb back from ignominy, but with the latest PowerBook generation, Apple once again leads the market in design, performance, features, and—something no previous PowerBook has been able to claim—value.

Heavenly design

With the new PowerBook G3 line, distinctive design is once again a hallmark of the mobile Mac. The sleek black chassis is appropriately Batcave-esque, since this curvy case incorporates an array of clever gadgets and hidden tricks. For example, a combination of smooth and textured case surfaces ensures a solid grip.

Among the other design enhancements are quick-release handles for removing expansion modules—including dual batteries—from the PowerBook's two bays, a pop-up keyboard to ease access to internal slots, and labels on the inside of the port door to help you navigate.

The keyboard alone sports a half-dozen improvements: scissor switches for quieter, firmer typing; inverted-T cursor keys; access to alternate key functions (for numeric or PC-standard commands); and brightness, mute, and volume buttons. The new PowerBook's built-in speakers deliver sound quality and stereo separation far superior to those of previous models. The batteries even sport button-activated LED power gauges.

No-compromise performance

The new PowerBook G3—confusingly identical in name to the original PowerBook G3, which was essentially an upgraded PowerBook 3400—is based on the same logic-board architecture as Apple's Pentium-trouncing Power Mac G3 systems, so it's no surprise that these new models are the fastest portables Apple has ever built. But what might come as a shock is that these portables are only nominally slower than their desktop counterparts.

You can configure your new PowerBook G3 with one of three processor, bus and hard-disk combinations. For \$4495, Apple offers a 233MHz processor with a 66MHz system bus and no backside cache; this model has a 2GB IDE hard disk. Next up, \$7495 gets

Our reviewers evaluate, rigorously test and give detailed assessments of new-release software and hardware. For brief reviews, turn to page 19.

PHOTOGRAPHY: MARK JOHANN



The PowerBook G3 is deeper and wider than previous models, but is only 5.1cm thick when closed.

you a 250MHz G3, paired with an 83MHz system bus and a 1MB backside cache running at a 2:1 cache-to-bus-speed ratio; this model has a 4GB IDE hard disk. At the top of the line, the \$10,995 292MHz G3 comes equipped with the same cache and bus as its 250MHz sibling; this model comes with a 8GB IDE hard disk.

The new PowerBooks don't just sport wicked-fast processors, though; they also contain the fastest graphics sub-systems ever in a PowerBook, based on the ATI 3D Rage LT chip set.

Featured player

The list of standard features on Apple's new portables is long: built-in 10BaseT Ethernet, a VGA-out port, full-speed IrDA infrared networking, two high-speed CardBus PC Card slots, and a 20x CD-ROM drive. A floppy drive isn't standard on the low-end configuration, but it's on the list of add-ons that help the new PowerBooks really shine. You'll also be able to fill one of the expansion bays with a DVD-ROM drive when they become available through Apple Computer Australia later this year.

Remember when buying a Mac meant living with limited options? No more. The PowerBook G3 line

offers three display choices: an 800-by-600 pixel 12.1-inch passive-matrix screen (on the G3/233), as well as 13.3-inch and 14.1-inch active-matrix screens with a resolution of 1024 by 768 pixels (on the G3/250 and G3/292 respectively). The two larger screens come standard with S-Video out. The PowerBook model with the 12.1-inch screen ships with 2MB of VRAM and displays thousands of colours on the internal screen and millions on an external monitor. Those with the 13.3- and 14.1-inch screens come with 4MB of VRAM and provide millions of colours.

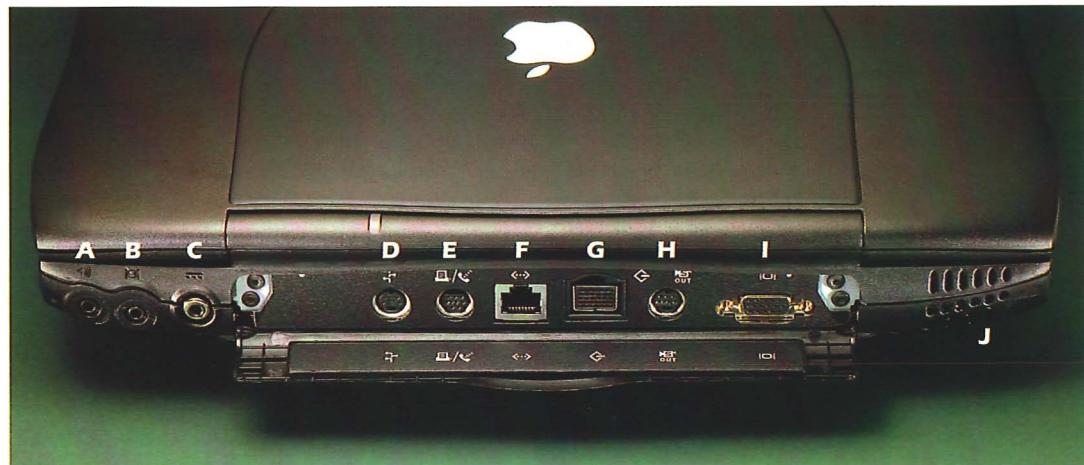
Although these models are the best systems Apple has produced in years—desktop or portable—a few minor complaints remain. You can no longer run the PowerBook with the lid closed, due to thermal considerations. Overall, it's still too big and heavy, weighing in at about 3.3kg and measuring 32.3 by 26.4 by 5.1cm (or 5.3cm deep in the model with the 14.1-inch screen).



The new PowerBook G3 notebooks offer—finally!—the full functionality of a 105-key extended keyboard, complete with an inverted-T set of arrow keys. The new fn, or function, key (lower left, outlined in yellow) gives users access to special functions for many of the G3 keyboard's keys. The F5 and F7 through F11 keys (outlined in red) double as num loci, insert, forward delete, scroll lock, print screen, and pause, respectively. The keys outlined in orange, in conjunction with the fn key, can be used as a numeric keypad. And the directional-arrow keys (outlined in blue) also provide the page up, page down, home, and end functions.

The bottom line

If you've been thinking about purchasing a PowerBook, now's the time. Other than a couple of minor shortcomings, Apple hasn't missed a trick with this new line of portables. Performance considerations will steer you towards the G3/292 and G3/250; stay away from the G3/233 if possible. And if viewing comfort is



Except for S-Video out, which is available in the 13.3 and 14.1-inch configurations only, the following ports are standard across each model in the new PowerBook G3 Series: stereo sound in (A); stereo sound out (B); power (C); ADB (D); LocalTalk/Serial (E); 10BaseT Ethernet (F); HDI-30 SCSI (G); S-Video out (H); VGA video out (I); and 4Mbps IrDA (J).

No Compromises / G3 PowerBooks close in on desktops

Macworld LAB TEST	SpeedMark	MacBench processor	MacBench disk	MacBench graphics
TEST SYSTEMS				
PowerBook G3/292	4.6*	1027	342	675
PowerBook G3/250	4.0*	884	286	606
PowerBook G3/233	2.9	450	245	407
REFERENCE SYSTEMS				
Power Mac G3/266	4.5	895	362	566
PowerBook 3400c/240	1.9	337	226	232
PowerBook 1400c/166	1.1	154	153	129

*The PowerBook G3/250 and G3/292 have a fixed 1024-by-768-pixel display. As a result of longer scroll times for larger displays, their SpeedMark scores are slightly understated. Best overall performance in red. Longer bars and higher numbers are better. Bold indicates the best result in a subsystem test. SpeedMark scores are relative to that of a Power Macintosh 7100/80, which is assigned a score of 1.0. MacBench 4.0 scores are relative to that of a Power Macintosh 6100/60, which is assigned a score of 100. Macworld Lab testing supervised by Gil Loyola

your main consideration, you can't go past the G3/292. It's 14.1-inch display is bright, sharp, and offers almost as much viewable space as a 15-inch desktop monitor. Compared with similarly equipped Windows notebooks, it turns out to be a good deal—despite the \$10,995 price—offering the best of everything. For those with slightly less expansive budgets, the G3/250 came close to matching the advantages of the G3/292, for \$3500 less. ☺

AT A GLANCE

Pros

PowerBook G3/233: Least-expensive G3 PowerBook; excellent features. **G3/250:** Great mix of features and performance; top value. **G3/292:** Excellent feature set with no compromises; good value.

Cons

PowerBook G3/233: Large size for its relatively tiny screen; lack of backside cache; no floppy drive. **G3/250:** None significant. **G3/292:** None significant.

•Support Agreements

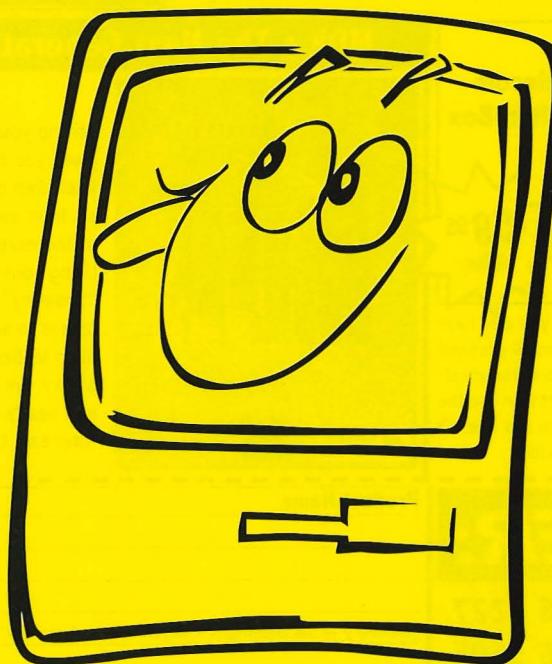
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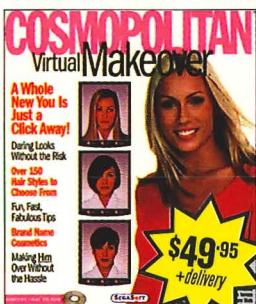
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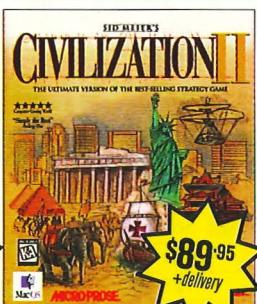
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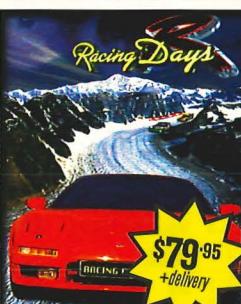
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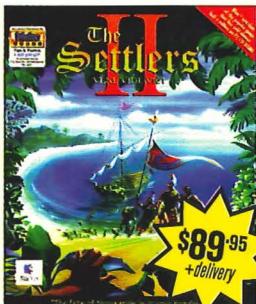
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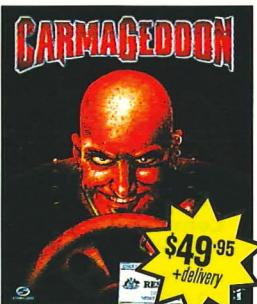
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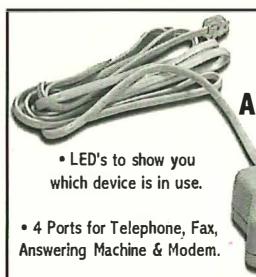
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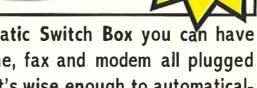
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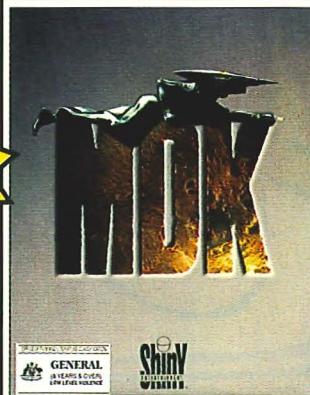
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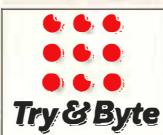


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	Scriptware 1.0	Final Draft 4.16c
Type:	Scriptwriting	
Rating:	1/2	1/2
RRP:	\$460	\$450
Publisher:	Cinovation	BC Software
Distributor:	Strictly Literary	Like Magic
Telephone:	07 3848 1141	02 9971 1796
Faximile:	07 3892 1929	02 9971 2261
Reviewer:	Stephen Dunne	

Two scriptwriting programs

PRICEY PROGRAMS DO ONE THING VERY WELL

CUT TO: INT. A DINGY OFFICE—NIGHT We see the hang-dog writer, his ashtray overflowing, a half-empty bourbon bottle at his elbow, staring at the screen of his aging Mac. He chews his fingernails, he scratches his nose, he looks disinterestedly around the room, waiting, waiting, waiting.

DISSOLVE TO:

People who think that writing scripts for film and television is easy have obviously never heard of formatting (or revisions or producers). For reasons lost in the midst of time, screenplays have an unchangeable format, decided in the days when they were still typed on Selectrics. For instance, you never send a script in anything other than 12-point Courier—sure it's ugly, but it looks like a typewriter!

Most writers still crank out screenplays by adapting their standard word processors to screen format. I've been using Microsoft Word with a collection of Style sheets for about five years now—I've even tricked the footnote function into becoming an automatic scene-numbering feature. With a bit of effort, it can work.

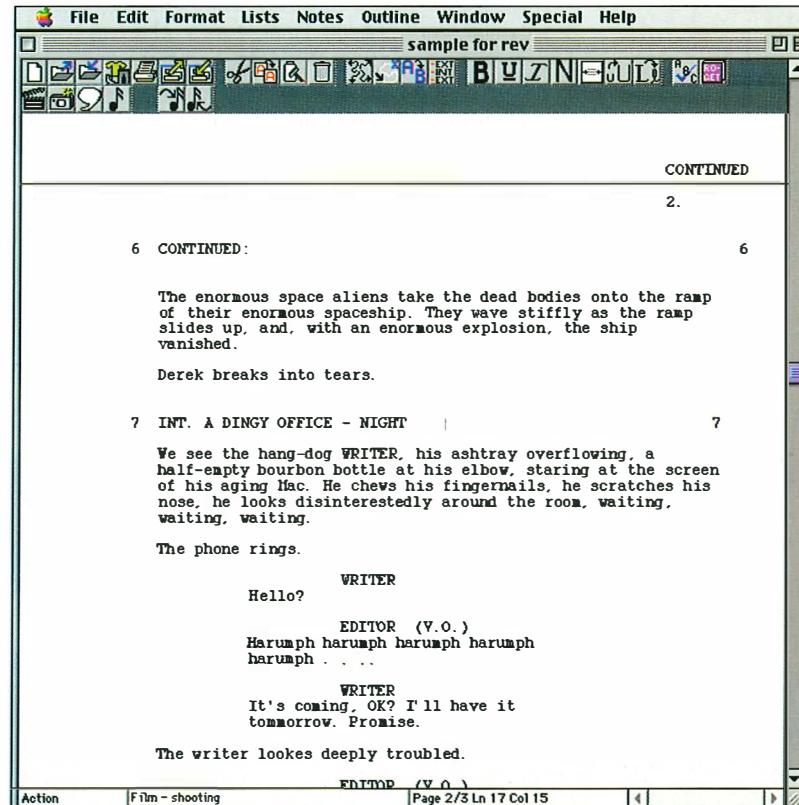
So is it worth spending the extra cash on a real screenwriting program? In a word, yes. Because both these simple programs (each comes on two floppies) only do what they do. They're simple, dedicated pieces of software. And they both work very well.

Accomplished performers

Screenplays are basically a collection of text in certain formats in a certain order—scene heading, action, character name, dialogue and transition are the most obvious.

Both programs have a registered name for this feature: Final Draft has SmartType while Scriptware's is Scriptype. Both remember any character (or scene heading) you type in. After the first time typing "LINDA VOESTRANGLER", you only type "l" on a character line, and the program supplies the rest. If Linda has a brother called Larry, "li" or "la" is enough to distinguish between them.

Final Draft uses macros (triggered by typing $\#$ -1, $\#$ -2 and so on) to specify various formats. It also selects the most obvious choice when you hit return, so after a character name, a return will automatically take you to dialogue.



Scriptware also uses macros, but has a slightly more intuitive interface. At any cursor point, pressing tab cycles you through the options (no macro numbers to remember). A return takes you automatically to the next logical format. I personally found this easier to write with than Final Draft, but both systems are simple to master.

Both will convert your script into scene lists (Final Draft will also print cards). Both allow you to 'lock' your script (so any additions generate new pages) which is useful if your baby ever gets made into a film. Both automatically insert page breaks, "(CONT)" and the like.

Both let you control formatting, though Scriptware has a nice feature that will shrink (or expand) your script to fill a specified number of pages: 90 is the industry standard. You can achieve the same effect in Final Draft by fiddling with the formatting.

Programs such as Scriptware (pictured) and Final Draft let you automatically format and reformat scripts according to established industry standards.

Two scriptwriting programs

Scriptware also supports television and play formats in the program—you can get television formats for Final Draft for \$US30.

Scriptware has the better manual, and no annoying 'key disk'. So, if you're starting from scratch, it's the better product. But, you say, what if I want to convert my Word script into one of these programs?

Final Draft has no problems. Save your script as an RTF, and Final Draft will read each style in the document and ask you which of its styles it should convert each of the Word styles to. Trouble-free and very effective.

The Scriptware manual says it has this feature, but it doesn't (yet). The kids at Cinovation, Scriptware's developers, said they'll have it up in five weeks (that is, by the time this hits the newsstands), and yes, it would work just like Final Draft's. They suggested I paste my script from Word into Scriptware.

Couldn't do it. Another email to Cinovation, explaining the problem. To give them credit, within 48 hours they sent back a 1MB patch which fixed the problem. Kind of.

Scriptware (with the bug fix) will accept text pasted from Word, but it won't recognise any of the formatting. You have to go through it line-by-line and fix it. This is basically useless—you could do a text-only import for precisely the same effect.

The bottom line

If Scriptware does finally get RTF imports and they work (and given the speed in which they supplied the bug fix I'm inclined to believe them) it's a better product. Before you buy it, however, demand to see this feature demonstrated, and check for an RTF-import patch at <www.scriptware.com>.

But to be honest, Final Draft will also work just fine. Both programs have proprietary file types, which is a consideration if you need to share your work—which program do your friends have? But in the end, I suspect the program is the least important part of the equation. The formatting is sure vital, but in scripts nothing beats imagination and decent dialogue. As long as it's in 12-point Courier. ☺

AT A GLANCE

Pros

Both programs do what they say they'll do—allow you to easily produce film scripts with industry-standard formatting with a minimum of fuss.

Cons

Both programs seem rather pricey. The 'key disk' requirement on Final Draft is annoying. The problems in importing Word files into Scriptware are very annoying (but they should be fixed by now).

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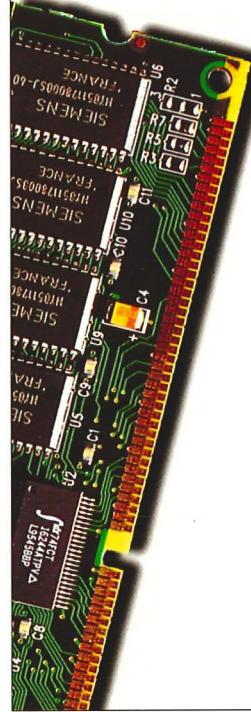
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Rating:	
RRP:	\$699
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Telephone:	02 9971 1796
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Reviewer:	Stephen Beale

Dramatica Pro 3.0

STORY ANALYSER ADDS LEARNING TOOLS

imed at aspiring novelists and screenwriters, Screenplay Systems' Dramatica Pro is the CAD software of drama: it uses your answers to a series of questions to generate a storyform, which is a detailed blueprint for your plot, themes, and characters. It's not as simple as it sounds; before you answer those questions, you have to think about stories in a new way—what the program's authors call the Dramatica Theory. Fortunately, version 3.0 is better organised, offers improved built-in learning aids, and sports useful new tools for building characters and exploring themes.

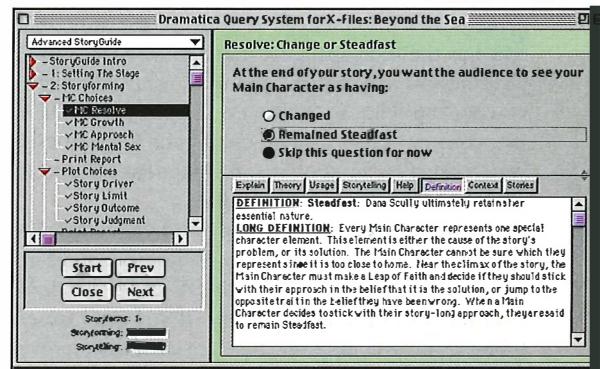
Dramatica Pro sometimes gives you the eerie feeling of an intelligence lurking inside your computer. In reality, it's a database of dramatic elements linked to one another according to rules specified in the Dramatica Theory. You begin with 32,768 possible storyforms, each defining the 'deep structure' of the story. For example, *Romeo and Juliet* shares the same structure as *West Side Story*, even though the former is set in Renaissance Italy and the latter in 1950s New York.

As you answer questions about your tale, the number of available storyforms decreases and your choices become more limited. Here's where Dramatica can be a bit vexing: give the program a few tidbits about your main character, and it suddenly tells you that the story should have a negative (or positive) ending.

Some of the questions Dramatica poses are straightforward: Does your main character tend to be active or passive? Will your protagonist change or remain steadfast? Does the story end when time runs out or when options are spent? Other questions involve Dramatica's four throughlines: objective character, subjective character, objective story, and subjective story. Each throughline takes place in a certain domain—mind, universe, physics, or psychology.

Dramatica Pro assigns its own meanings to such terms, and learning the definitions is one of the challenges of using the program. One useful addition in version 3.0 is a built-in dictionary that you can organise topically or alphabetically. You can also access definitions with the program's extensive—and vastly improved—query system, which guides you through the storyforming process. And the complete Dramatica Theory guide can be had from <www.dramatica.com>, along with Dramatica-inspired reviews of popular movies to help you get the idea.

Along with improved learning tools, Dramatica Pro 3.0 offers new functions for defining characters. You can quickly add profiles for stereotypical characters, such as bully, introvert, or nerd. New fields in the query system let you define relationships between any pair of characters. Previously, the query system was limited to information about the main and obstacle characters.



Dramatica Pro 3.0 uses well-known dramas to help you learn its unique approach to storytelling.

The biggest problems with the new version lie outside the software. The package includes minimal printed documentation—just a thin manual, a comic book, and some charts. Version 2.0 included a valuable printed guide to Dramatica Theory that's now available only in electronic form. It's nice to have the guide built-in, but it's best read cover to cover due to the volume and complexity of the material. Finally, unlike previous versions, Dramatica Pro 3.0 is copy-protected; you can install the software only three times.

The bottom line

As unique and engrossing as Dramatica Pro 3.0 is, using it means adopting the Dramatica Theory and climbing a steep learning curve. If you think the theory will work for you, you'll find Dramatica Pro well worth the price.

AT A GLANCE

Pros

Solid integration of story-building functions; strong built-in learning aids.

Cons

Copy-protected; underlying theory can be difficult; limited printed documentation.

Type: Optical character recognition
Rating: 
RRP: \$889 (\$249 upgrade/crossgrade)
Publisher: Caere
Distributor: Performance Sales
Telephone: 02 9450 0777
Facsimile: 02 9450 0778
Reviewer: Suzanne Courteau

OmniPage Pro 8.0

OCR TITAN IS GREAT UPGRADE VALUE

Like many people, I have a hard time achieving the ideal of the paperless office. I'm fine if the information is already in my computer, but the swamp of papers crowding my life leaves me feeling, well, swamped. Luckily for folks like me, optical character recognition (OCR) offers a real solution for converting all that paper into useable, storable, and virtually spaceless electronic text documents. The best of this genre, Caere's OmniPage Pro, saves not only your text but the accompanying graphics as well. It even preserves the appearance of your source document, so you end up with an electronic file that looks like a magazine page, not a single column of 12-point Helvetica text. Its latest version, OmniPage Pro 8.0, makes using OCR easier than ever.

If you've used previous versions of OmniPage, the upgrade's changes aren't immediately obvious; its menu commands and the Auto OCR tool bar look the same as in previous versions. If you look closer, though, you will discover there are exciting improvements.

In the past, you could configure OmniPage Pro to automatically 'zone' a scanned document (that is, break down the file into text and graphics, and then again into columns, paragraphs, and other components), or you could do it yourself. For complex documents, it was usually easier to perform this task manually to preserve the look of the original. Not only are OmniPage Pro 8's auto-zoning skills vastly improved from those of previous versions, but it's

also much easier to draw zones yourself, due to the new version's ability to account for already-defined components when defining multiple zones.

OmniPage Pro 8.0 also offers better document-straightening features to help you obtain better recognition results, boasts improved recognition of numeric-only pages, and supports coloured text. OmniPage Pro now recognises multiple languages—even when mixed together on the same page—including US and British (but not specifically Australian) English, Danish, Dutch, Finnish, French, German, Italian, Norwegian, Portuguese, Spanish, and Swedish. OmniPage Pro made numerous errors in the foreign-language sections of a mixed-language test document, but the previous version of OmniPage wouldn't have recognised foreign languages at all, so you'll have to weigh the benefit to your specific tasks.

OmniPage Pro shows its true strength with less-than-perfect originals. On one test document—an old photocopied flier printed on orange paper—OmniPage Pro made only three errors while preserving the formatting of the original perfectly.

Caere still hasn't added graphics support to OmniPage Pro's Direct Input feature (which makes OmniPage available under the Apple menu), but plenty of other useful features abound. And Caere makes an enticing offer: if you own any OCR software—a competitor's product, an ancient version of OmniPage, or a limited-version OCR package that came with your scanner—you can upgrade to OmniPage Pro 8.0 for \$249, about one-quarter the price of the retail version. With a deal like that, you'd be hard-pressed not to crawl out of the paper swamp.

The bottom line

OCR isn't perfect; 100 percent-accurate optical character recognition is still quite a way off. But within the technology's limits, OmniPage Pro 8.0's capabilities are nothing short of amazing, and its competitive-upgrade price makes it a deal that's hard to pass up. 

AT A GLANCE

Pros

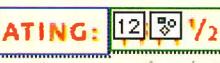
Inexpensive; easy to use; works well on a wide variety of document types.

Cons

Limited accuracy on foreign languages; no support of graphics via Direct Input feature.

OmniPage Pro 8.0 automatically adjusts a zone's borders to prevent overlap (and confusion) with neighbouring zones.

than reviving an older PC model—but many special-purpose PC printers don't have Mac equivalents. For these, PowerPrint is a necessity.—GALEN GRUMAN

+ **ATING:**  **PROS:** Easy to install and use; improved print times; longer cable. **CONS:** Noticeably slower than printing from a PC. **COMPANY:** Infowave Imaging (604/291-9121, www.infowave.net). **LIST PRICE:** \$100.

Type:	Scientific software
Rating:	3 green footprints
RRP:	\$3495 (\$595 upgrade)
Publisher:	National Instruments
Distributor:	National Instruments Australia
Telephone:	03 9879 5166
Fax:	03 9879 6277
Reviewer:	Charles Seiter

LabView 5.0

WIZARDRY, WEB CONNECTIONS FOR LABS

Arguably one of the most complex pieces of Mac software ever, National Instruments' LabView has no real competition in the area of data acquisition and control of laboratory equipment and instruments. LabView 5.0 expands on the program's original theme of connecting lab instruments and computers, theoretically allowing all instruments and all computers to be connected via the web. It's gigantic—a typical installation might involve 200MB of support files and programs in LabView's graphical programming language—but mastering LabView is definitely worth the effort.

The LabView picture

From the beginning, LabView has used a virtual-instrument front panel as its interface; you can wire together a set of icons on screen to make the panels functional. In the first version's diagram-based programming, this meant diagrams with a few simple functions—mostly 'virtual components' for operational amplifiers and other familiar lab-electronics components, or complete virtual instruments (standard commercial meters, amplifiers, and scopes) from a library—and most users could put together a basic but useable instrumentation interface in an afternoon. The fundamental concept is simple: once you convert an analog voltage or current into a digital value, the computer can handle any further processing of that value—something that once required lab hardware.

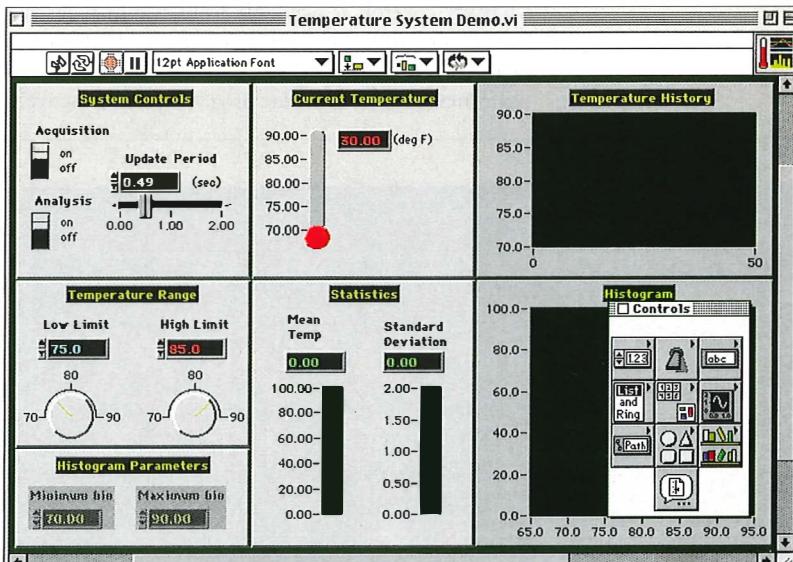
As National Instruments evolved a set of functions and virtual instruments to cover every possible data-analysis situation, two issues arose: the sheer complexity of programs, and the lack of serious debugging and version control in the graphical programming environment.

To resolve the first problem, LabView 5.0 adds three wizards. One of these leads you through a series of dialogue boxes to help you set up the correct data-acquisition protocol; an input-channel wizard mathematically conditions signal inputs, typically converting a voltage to a physical measurement value such as temperature, luminosity, or sound intensity; and an instrument wizard scans your physical input/output connections and installs drivers that let LabView control the instruments attached to your Mac via standard instrumentation-bus hardware. If you're already using LabView, these wizards alone justify the \$595 upgrade.

The other issue version 5.0 resolves is the program's previous lack of serious debugging and version

control in the graphical programming environment, known as G. This environment now makes it easy to identify and report differences among G-language diagrams, a unique facility that really helps on large projects with several contributors.

LabView 5.0 is so powerful that it can tackle larger instrumentation and control problems than you'll probably ever face. The downside is that LabView's scope has widened to the point that the program is overkill for data-logging activities in smaller



LabView lets you create instrument panels on screen and then operate their switches, sliders, and dials with a mouse.

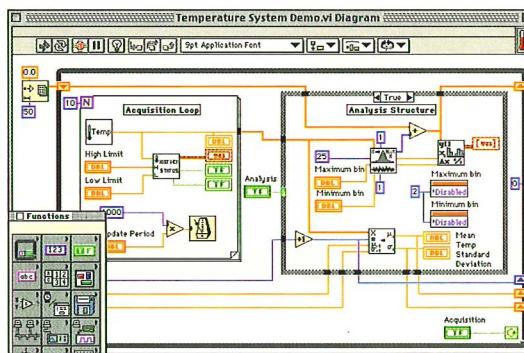
labs with only a few instruments. For those situations, products from companies such as GW Instruments (distributed by Scitech: 03 9480 4999, fax 03 9416 9959) would be more appropriate.

Wired to the world

At its most basic level, LabView 5.0 adapts to the web's ubiquity by automatically generating documentation for an instrument diagram in HTML. The new version also supports local intranet-distributed computing: specifically, simple code tools let you set up one networked computer as the controller of other computers, which are connected to instrumentation in labs across the network.

LabView 5.0 gives you two ways to monitor and control your equipment from a computer anywhere in

LabView lets the user link virtual instruments in a visual programming environment. Version 5.0 adds wizards and a debugger (not shown).



the world. One is with automation-server software: from within C, Microsoft Excel, or LabView language programs on remote systems, you can make calls to LabView running on a server.

The other method—operating LabView's virtual instruments from within a web browser—is a little trickier, because LabView is now an ActiveX container, meaning that it can edit and use ActiveX controls (including standard controls for opening web browsers and passing information). An assortment of ActiveX controls is available from National Instruments, and more are being developed by third parties. This reliance on ActiveX for web-connection tasks is unfortunate, since few Mac programmers see ActiveX

as a better choice than Java for complex jobs. (National Instruments worked closely with Microsoft to develop parts of this package, and ActiveX probably looked like a safe bet at the time.)

The ideal of operating lab equipment, quality-control inspection devices, and safety-monitoring equipment remotely through a web connection isn't quite here yet, but LabView provides the tools that, with some additional programming effort, can make the ideal a reality.

The bottom line

National Instruments has assembled the most impressive set of data-acquisition and instrument-control software components ever put in a box. LabView is overkill for smaller labs, and its allegiance to the embattled ActiveX causes some Mac difficulties, but Mac users who know a spectrometer from an oscilloscope should check out version 5.0. 

AT A GLANCE

Pros

Improved graphical programming language; wizards for common tasks.

Cons

Too large and expensive for simple monitoring.

TO PRODUCTION DEPT. WED 9.30 AM: THE
CLIENT IS **MAKING** UNREASONABLE DEMANDS
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IN FILE AND I MUST SEE IT IN COLOUR
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Type: Painting
Rating: 
RRP: \$199 (\$149 academic)
Publisher: MetaCreations
Distributor: Scholastic New Media
Telephone: 02 4328 3555
Facsimile: 02 4328 2205
Reviewer: Cathy Abes

Painter Classic

STREAMLINES PAINT TOOL

Whether you're an Adobe Photoshop user, a web designer or a traditional artist looking to leap into digital media, MetaCreations hopes to lure you into digital painting with its budget-priced Painter Classic 1.0. Positioned between elementary Art Dabbler 2.1.1 and top-of-the-line Painter 5, Painter Classic offers the same natural-media features that made the original Painter unique, while shielding you from many of its complexities.

Like Art Dabbler, the \$199 Painter Classic is a 'lite' version of Painter, but it's much more versatile. While Art Dabbler provides only minimal brush controls, Painter Classic's sliders enable you to set a wide range of brush sizes, opacity levels, and grain sizes, as well as create multicolour strokes. But to minimise the intimidation factor, MetaCreations stripped out Painter 5's more sophisticated features, such as hidden palettes, layers, mosaics, animation and colour management.

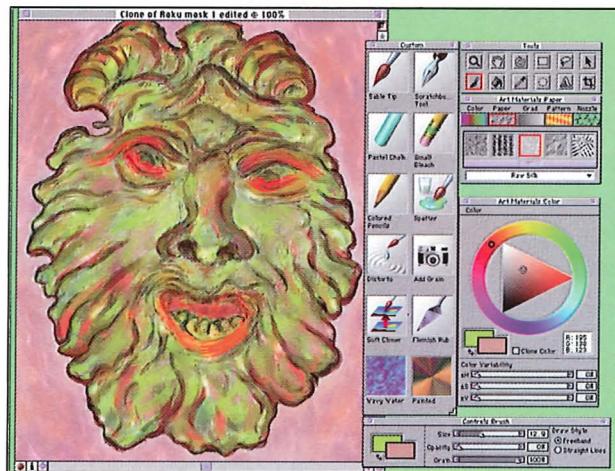
Supplementing Painter Classic's built-in natural-media tools are plenty of extras on the CD, including six brush libraries, 23 texture libraries, and 25 pattern libraries, as well as nine Image Hose nozzle libraries for painting with objects.

With a little work, you can create seamless tiles for use as web-page backgrounds, and Painter Classic lets you save GIFs with transparency. It supports JPEG, EPS, and Photoshop file formats—but although it can export CMYK separations, it can't even open CMYK files.

As with Painter, you can record and play back painting sessions, and you can manually clone or autocloning images to add painterly effects to digital photos.

You won't get much out of autocloning, however, if you forget to check the Clone Color box in the Color palette; instead of using the colours in your clone source, the autocloner will paint random brush strokes (in the designated Primary Color) that bear no resemblance to the original image. An easy fix would be to set the default to Clone Color, since it makes no sense to disable it.

In its zeal to weed out complexity, MetaCreations clearly went too far. Painter Classic's most serious omission is the ability to save customised brushes and tools. Although you're free to modify settings in the Controls palette, your changes vanish as soon as you switch tools; when you go back to the previous tool, its default settings are reinstated. This quickly



You can tear off Painter Classic's tools to create custom palettes, but they're not as useful as they could be.

becomes a nuisance and a big impediment to creative momentum.

Unfortunately, you can't have more than one library of brushes, patterns, textures, or nozzles available at any given time; the built-in brush tools, for example, aren't accessible when you load one of the extra brush libraries. So although I could tear off a tool and add it to my custom palette, it was no longer accessible once I'd switched libraries. Another frustration: the only way to remove tools from a custom palette is to delete the entire palette and rebuild it.

Finally, I didn't find Painter Classic's documentation too helpful: it offered few in-depth answers to my questions.

The bottom line

Painter Classic packs a lot of painting punch for the money. But the program could be even better if MetaCreations would fix its irksome interface flaws—that way, you could spend more time creating and less time resetting your tools and palettes. ☀

AT A GLANCE

Pros

Simplified interface; rich tool set; wide range of settings.

Cons

You can't save tool settings, have multiple libraries loaded, or remove tools from custom palettes; skimpy documentation.

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Back-seat driver

QI inadvertently installed an FWB hard-disk driver on my Power Mac 8100 when I was running System 7.5. Since then I've updated the system software through Mac OS 7.6 and Mac OS 8, and even had a crack at installing Mac OS 8.1. Each time, the installer said it couldn't update my hard-disk driver, and asked whether I wanted to ignore the warning or cancel the installation process. Of course, I just ignored the warning. I mean, what are warnings for? Anyhow, things started to go awry, to the point where I couldn't startup from my hard disk or my Mac OS 8 CD-ROM. In the end I reformatted the hard disk from a floppy, zapped the PRAM and re-installed Mac OS 8 (there goes that warning again). I think the old FWB driver could be the root of my problem. What do you reckon?

Roger Paine

Luke: Ignoring things is bliss. Is that how it goes?

Paul: Only if you really don't want to keep all your precious data in one piece. Warnings are a Good Thing: they alert you that things are likely to go seriously wrong if you continue on your current path. Mac OS is usually very good at giving sensible, plain-English messages about what you're doing. When you hit an 'Are you sure you want to...' message you know that you should stop and think a bit about your next step.

Luke: You gain little by letting it slide.

Paul: A wiser man than me once gave me a very good piece of advice: never ever trust your data to any fewer than two forms of media. Dare we use that B-word again?

Luke: And although some tools will let you rip out and replace a third-party hard-disk driver, experience tells me another tack is necessary.

Paul: I agree. Hard-disk drivers do more to protect your data than healthy system software. If your System Folder goes west, you usually end up with an unbootable but otherwise intact hard disk. If your Mac has arguments with the disk-driver software, however, anything can happen (to your data, that is).

Luke: Anyway, you've had the right idea: reformat the hard disk, after booting from a floppy or startup CD, and install Mac OS again. But it sounds like you've used the Finder's Erase Disk command rather than reformatting the hard disk.

Paul: A Finder erase just clears the hard disk's directory. A complete reformat with a specialised utility such as Apple's Drive Setup, however, updates the driver software, zeroes the low-level directory, and rewrites the whole logical layout of the hard disk (see figure one). If you're an *Aliens* fan, think of it as "dusting off and nuking the site from orbit": it's the only way to be sure.

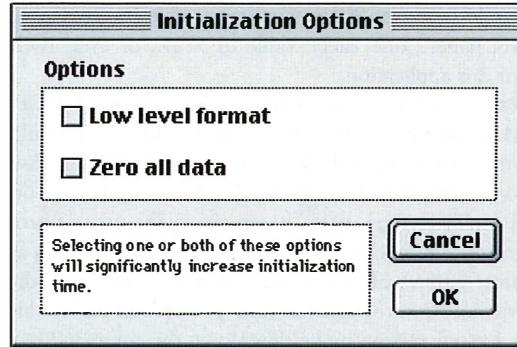


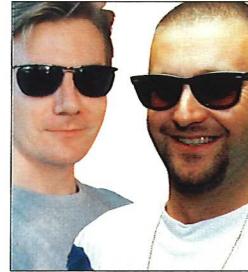
Figure one: Some of the heavy-duty options supported by Apple's own Drive Setup utility, included on Mac OS Installer CDs.

Luke: Have another go: but this time, use Apple's Drive Setup to reformat the hard disk, thus placing a new driver on it.

Paul: Like we've said before, wherever possible, it's wise to use Apple's own hard-disk drivers, since they're always well behaved with current system software. If Drive Setup doesn't want anything to do with the disk, however, then your best bet is to buy the latest version of FWB's Hard Disk Toolkit and reformat using that.

Luke: Thus endeth the error message.

[Ed.—At writing FWB was between Australian distributors, following the wind-up of Mitsui Computer. However, upgrades can be ordered through <www.fwb.com>, and many Apple-authorised resellers would still have FWB product in stock.]



Luke Oliver (right) and Paul Baily (left) answer our readers' questions.

Email your query to:
<steve@niche.com.au>
or write to:
Help Folder,
Australian Macworld,
PO Box 2043,
St Kilda West, 3182

Not yet riven

QI have a PowerBook 5300ce running Mac OS 8. I recently purchased an external 24x CD-ROM drive, and I connected this to my PowerBook using a HDI-SCSI adaptor. I assumed (dangerously) that this would adequately run Riven, so I went out and bought a copy. As great a game as this is, it is frustrating to see its beautifully smooth movies and crisp soundtrack ruined by the jerky throughput from my CD drive to my PowerBook.

Dorian Workman

Luke: Ah yes, I think I speak for both of us by saying we've found Riven to be a time machine. Fire it up and hours can disappear before you know it.

Paul: On paper, your Mac should be more than capable of running Riven, and your CD-ROM is certainly quick enough to suit, but let's run over some specs that also affect things. First, memory.

Luke: That's right. The fastest machine will still struggle if you skimp on RAM, and you can never have too much. We suggest 24MB at the very least for a PowerPC-based Macintosh, but 32MB or more

would be better. Make sure you set the Memory control panel's disk cache value to 512K, or even 1MB for this application.

Paul: Next is virtual memory. VM helps your Power Mac run more programs simultaneously than would otherwise be possible, by using part of your hard disk to simulate RAM. While this can be handy for run-of-the-mill daytime work, it can get in the way of programs that require peak memory performance, such as most games. Here's a tip: rather than going to the Memory control panel to turn VM off and on, disable it for one session by holding down the command (⌘) key when you startup your Mac. Release it after you see the progress bar on screen.

Luke: Another likely culprit is all those system extensions and control panels that load into memory at startup. Holding the shift key down at startup will disable them all until you next restart, but you often need some of them enabled to run games: notably, in this case, your CD-ROM software.

Paul: Fortunately, your Mac has a control panel called Extensions Manager that makes it easy to create a 'run lean, run fast' configuration that you can use whenever you play games.

First, open Extensions Manager (under Control Panels in the Apple menu) and save the current set, which probably includes all bells and whistles. Next, switch to the Mac OS 8 base set. This includes only the bare-bones extensions required to start your Mac.

Luke: Then, duplicate that minimal set and save it as a Games set. Last, re-enable any extensions needed for gameplay (including QuickTime, the CD-ROM driver and any joystick software), and restart.

Paul: And don't forget to hold down that command key to disable VM at startup.

Luke: When you're done exploring the D'ni age, just hop back into Extensions Manager, switch back to your normal extension set, and restart. You're now ready to get back to work.

Paul: Only hours will have passed in the world outside.

Touched by the power

QI have a PowerBook 1400cs with 32MB of RAM, System 7.5.3 and a NetComm CardModem 336. Whenever I open an internet connection I get about five minutes of surfing time to flick through a couple of sites—then the browser just stops. I have had the same problems with two different ISPs.

Mark Tavener

Luke: This is almost certainly the 'Touchfone Syndrome', caused when a handset or other device (often a Touchfone-brand telephone) connected to your phone line is drawing current from it, usually to

ensure its number memory doesn't disappear. This refresh current is sufficient to interfere with your modem call. Temporarily disconnect all the telephony devices in your house, and try firing up your modem again.

Paul: Call waiting can also make your modem run off screaming into the jungle. That innocuous little 'bleep-bleep' you hear when a second call comes in can confuse a modem enough to make it drop carrier.

Luke: You can disable call waiting using the instructions in your local *White Pages*.

Paul: When I'm online, I set my phone so that incoming calls are diverted to my mobile immediately. No second phone line, no confused modems, and no missed calls. However, I pay heavily for calls received this way since they're re-routed from my home number to a mobile.

Luke: Yep, the function's called 'call forward busy', and it's explained in the *White Pages* as well.

Anonymous style

Q Since installing Mac OS 8, I have not been able to print to my StyleWriter II. I keep getting messages telling me that it's out of paper (it's not) and that the paper is the wrong size (it's not), as shown in figure two.

Darren R Harland

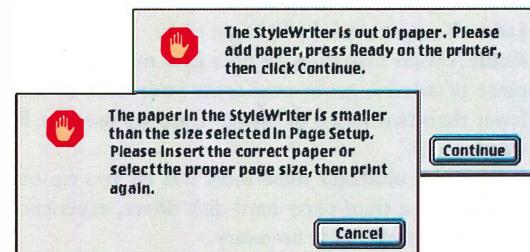


Figure two: Some of the error messages that can result if you're using the wrong printer driver for your printer.

Luke: The nice thing about using an Apple inkjet printer is that all the software you need to print is a part of the system software.

Paul: Under Mac OS 8.x, however, it's a little less than obvious which printer driver to nominate in the Chooser for a StyleWriter II, given that there's no longer a dedicated file for that printer.

Luke: Our guess is that you've used the StyleWriter 1200 driver, which would be the logical choice as the others look like they're for colour StyleWriters only. Don't let their names fool you though—the Mac OS 8 Read Me file says that the Color StyleWriter 1500 driver is the one to use with the StyleWriter II.

Paul: Apple's Tech Info Library <til.apple.com.au/> also suggests using the Color StyleWriter 2500 driver, so try both and stick with the one that produces the best results.

World-wide wait with OS 8

QI recently upgraded my Performa 5400/180 from Mac OS 7.6. to Mac OS 8. Since then, Netscape Navigator Gold 3.01 has slowed to about half its previous speed. Obviously, I have done something wrong. My Mac has 24MB of RAM and a 28.8Kbps modem. All other Mac OS 8 functions work well, except I've lost the Sleep and Erase Disk options that used to appear under the Special menu in the Finder.

Len Davison

Luke: There are many things that will slow down your web browsing, but Mac OS 8 isn't normally one of them. In fact, its new Java virtual machine gives your Mac a healthy speed kick when you visit web sites that incorporate Java-based applets.

Paul: Our first suspect is usually a lack of physical RAM, though your Mac doesn't seem too short on that. Next would be some of your settings in the Memory control panel: virtual memory and disk cache. A sure-fire way of getting these to recommended levels is clicking the control panel's Use Defaults button.

Luke: If your web browser is keeping a large disk cache (look in its Preferences dialogue box) it should run more quickly, because it will be more likely to find sites you've visited recently on your hard disk, rather than downloading them again off the internet. However, a corrupted cache can cause problems, so clear it out regularly. To do this in Navigator 3.x, select Network Options under the Options menu, click the Cache tab and then press the Clear Disk Cache Now button. Also, your web browser can get bogged down if your cache is excessively large: I recommend restricting it to 2-5MB, and to no more than 200 items.

Paul: You mention that the slow-down followed a Mac OS upgrade; control panel settings can change during a system software install, so checking them should be high on your list. Have a look at your Modem control panel to ensure it's set to your particular model. If your modem isn't one of those available in the control panel's pop-up menu, try downloading a script for it from its manufacturer's web site.

Luke: As for missing some features in the Finder, it sounds like you've turned on a feature I once heard euphemistically referred to as "The Manager's Desktop".

Paul: Hey! Give back your Finder's smarts by going into Preferences (under the Edit menu) and unchecking Simple Finder. ☺

Adelaide-based Luke Oliver is grateful for the dominance of Wintel, which should keep him gainfully employed for the rest of his life, but he owns and loves Macs. Paul Baily lives in Brisbane, but that's okay, they have Macs there too.

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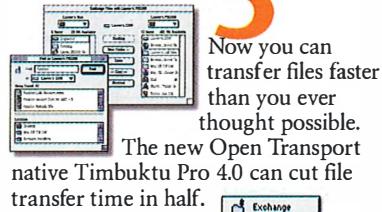
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Making Launcher pages



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The Launcher can support up to eight pages of Launcher buttons, each with its own page button. It makes sense to organise these pages by topic. Then, when you click the page button for a particular topic, a page full of Launcher buttons related to that topic will appear (see figure one). To create a new page and page button, open the Launcher Items folder inside your System Folder, create a new folder, and give it the name that you'd like to appear on the page button, preceded by a bullet point (type option-8).

Vassilios Samartzopoulos

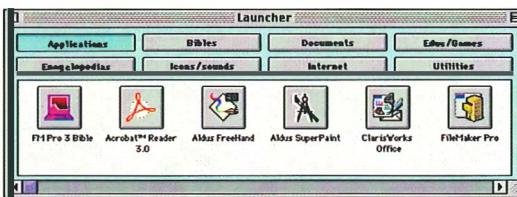


Figure one: the Launcher can support up to eight pages of Launcher buttons, each linked to a separate page button.

Flagging your internationalism

If that little Aussie flag in your Finder menu bar starts to annoy you—not that it would!—you can turn it off. Open the Keyboards control panel under the Apple menu. Then, deselect the US keyboard option or any other non-Australian keyboards that are enabled. Then—poof!—the Aussie flag is gone.

Barney Buoy

Seeing true QuarkXPress page numbers

The page-number indicator at the bottom of the QuarkXPress document window is not always reliable—a real nuisance, especially when you're zoomed in 300 percent and have to zoom out to confirm the true page number.

To quickly see the real page number, type **⌘-3** in any text box. Try scattering tiny text boxes with the page number throughout your document, or position some strategically on your master pages; make sure to set these text boxes to have no runaround and not to print.

Francis George

Faster Desktop pictures

If you want to quickly test a picture for use with Mac OS 8.x's Desktop Pictures control panel, particularly a JPEG downloaded off the net, try opening it with SimpleText rather than with the control panel itself. SimpleText will tap into QuickTime's conversion tools, and if it converts the image into a PICT file then you know you can use it with Desktop Pictures. This technique is often faster than using the Desktop Pictures control panel.

If SimpleText cannot display the picture, open it with Photoshop or GraphicConverter. The latter, which is \$US35 shareware from www.lemkesoft.de, will let you save the file as a QuickTime JPEG, while maintaining compression. Open the file with GraphicConverter, then choose Save As. Ensure JPEG/JFIF is your format, then click Options and change the Library from JPEG 6.0 to QuickTime. Click OK and then Save. Now, you should be able to use the image as a background picture in the Desktop Pictures control panel.

If you've got Contextual Menus enabled (a feature of Mac OS 8.x), control-click the Desktop and choose Change Desktop Background to more quickly launch the Desktop Pictures control panel.

Grant Davis

Apple menu tricks

If you often use Recent Applications in the Apple Menu, but you get annoyed with having to scroll through Find File, Print Monitor, •Shut Down and other redundant applications, or you're sick of finding that the application you're looking for has been replaced with an application you use once a year, consider making an alternative submenu of your own.

Uncheck Applications under Remember Recently Used Items in the Apple Menu Options control panel. Create a new folder in the Apple Menu Items folder in the System Folder, and call it something meaningful, like Applications. In it, place aliases to all your main applications, or to your preferred template document for these applications.

Also, placing an alias of the Apple Menu Items folder inside the folder itself makes changing items in this menu easier.

Matthew Lindfield Seager

PICA TIP OF THE MONTH

Saving files in corrupt folders

If a folder becomes corrupt, returning an error message when it is double-clicked, its contents can still be recovered using this procedure:

Drag the corrupt folder to the Trash. Create a new folder on the desktop. Open the Trash, and the corrupt folder within it. Drag the contents of the corrupt folder to the new folder on the desktop. Empty the Trash, which contains the corrupt folder but not the files you are rescuing. Open the new folder on the desktop to find the files that were formerly in the corrupt folder that you've just deleted.

Gary Le Lacheur



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Apple systems

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Macintosh 5500	\$2895	all-in-one	603e @ 250MHz	32MB / 128MB	256K	4GB (IDE)
iMac	\$2795	all-in-one	G3 @ 233MHz	32MB (SDRAM) / 128MB	512K	4GB (IDE)
Power Mac G3 Desktop 233	\$3495	desktop	750 @ 233MHz	32MB / 192MB	512K (backside)	4GB (IDE)
Power Mac G3 Desktop 266	\$3995	desktop	750 @ 266MHz	32MB / 192MB	512K (backside)	4GB (IDE)
Power Mac G3 Minitower 266	\$5195	minitower	750 @ 266MHz	32MB / 384MB	512K (backside)	6GB (IDE)
Power Mac G3 Minitower 300	\$6995	minitower	750 @ 300MHz	32MB / 384MB	512K (backside)	4GB (U/FW SCSI)
Workgroup Server 7600/200	\$5995	desktop	604 @ 200MHz	64MB / 512MB	256K	4GB (SCSI)
Workgroup Server G3	\$6495	minitower	750 @ 233MHz	64MB / 348MB	512K (backside)	4GB (U/FW SCSI)
Workgroup Server 9650	\$9995	tower	604e @ 350MHz	64MB / 768MB	512K	2x4GB (U/W SCSI)
Workgroup Server 9650	\$10,995	tower	604e @ 350MHz	64MB / 768MB	512K	2x4GB (U/W SCSI)
PowerBook 1400cs	\$2695	laptop	603e @ 166MHz	16MB / 64MB	128K	1.3GB
PowerBook 1400c	\$3295	laptop	603e @ 166MHz	16MB / 64MB	128K	2GB
PowerBook G3 (former model)	\$9995	laptop	750 @ 250MHz	32MB (EDO) / 160MB	512K (backside)	5GB (ATA IDE)
PowerBook G3/233	\$4495	laptop	750 @ 233MHz	32MB (SDRAM) / 192MB	none	2GB (IDE)
PowerBook G3/250	\$7495	laptop	750 @ 250MHz	32MB (SDRAM) / 192MB	1MB @ 125MHz	4GB (IDE)
PowerBook G3/292	\$10,995	laptop	750 @ 292MHz	64MB (SDRAM) / 192MB	1MB @ 146MHz	8GB (IDE)

Monitors: Design 14 Display (\$450); Design 520 Display (\$545); Apple Multiple Scan 720 Display (\$1200); AppleVision 750 Display (\$1500); AppleVision 750AV Display (\$1700); AppleVision 850 Display (\$3400); Apple Studio Display (\$4000).

*Apple's Premium Software bundle varies from product to product, but typically includes the Apple Internet Connection Kit, ClarisWorks Office, MacLinkPlus/Easy Open Translators, Microsoft Encarta, World Atlas, Microsoft Dinosaurs, Casualty Kid First Aid, Descent, F/A-18 Hornet, Crystal Calibur Pinball, MacLinkPlus, Click Art, Australian Product Reference Guide, PhotoFlash, Apple Personal Modem, Telecom 3.0, Apple Video Player, HyperCard Player, At Ease, SimCity 2000, Spaceway 2000, Spin Doctor, Super Maze Wars, Lemmings, Eric's Solitaire Sampler, Peter Pan Sampler.

Umax systems

All prices and configurations taken from CEA's latest price list at writing (30 April 1998), updated to reflect subsequent announcements. All prices include

System	RRP	Chassis	Processor	RAM / max	L2 cache	Hard disk
Apus 3000/240	\$2314	minitower	603e @ 240MHz	16MB / 144MB	256K	2.1GB (IDE)
Aegis 200	\$2726	desktop	604e @ 200MHz	32MB / 160MB	512K	2.5GB (IDE)
Pulsar Pro 1500 basic build	\$2196	tower	no CPU board	16MB / 1040MB	512K	none
Pulsar Pro 1500	\$2796	tower	604 @ 150MHz	16MB / 1040MB	512K	2.1GB (SCSI II)
Pulsar Pro 1800	\$3069	tower	604e @ 180MHz	32MB / 1040MB	512K	2.1GB (SCSI II)
Pulsar Pro 2250	\$3628	tower	604e @ 225MHz	32MB / 1040MB	512K	2.1GB (SCSI II)
Pulsar Pro 2330	\$3768	tower	604e @ 233MHz	32MB / 1040MB	512K	2.1GB (SCSI II)
Pulsar Pro 2500	\$4187	tower	604e @ 250MHz	32MB / 1040MB	512K	4GB (SCSI II)
Super Pulsar 3600 DP	\$3425	tower	2x 604e @ 180MHz	80MB / 1040MB	512K	2.1GB (SCSI II)
Super Pulsar 4000 DP	\$3907	tower	2x 604e @ 200MHz	80MB / 1040MB	512K	4.3GB (SCSI II)
Super Pulsar 5000 DP	\$5156	tower	2x 604e @ 250MHz	80MB / 1040MB	512K	4.3GB (SCSI II)
Super Pulsar G3	\$6721	tower	750 @ 266MHz	32MB / 1040MB	1MB (backside)	4.3GB (SCSI II)
Super Pulsar G3	\$7237	tower	750 @ 275MHz	80MB / 1040MB	1MB (backside)	4.3GB (SCSI II)
Super Pulsar Pro G3	\$8845	tower	750 @ 300MHz	80MB / 1040MB	1MB (backside)	4.3GB (SCSI II)
Super Pulsar Pro G3	\$10,980	tower	750 @ 300MHz	80MB / 1040MB	1MB (backside) @ 300MHz	4.3GB (SCSI II)

Monitors: Sony 15 (\$716); Sony 17 (\$1585); Sony 20 (\$3746); ViewSonic 14 (\$435); ViewSonic 15 (\$556); ViewSonic 17 (\$1271); ViewSonic 20 (\$2379);

Secondhand systems

This list is compiled by Mac Rent as an approximate guide to secondhand prices. All units are sold with warranty support and can be supplied internet-ready.

Discontinued Macintosh

Mac Plus	\$50	Centris 610 8/230/CD	\$500	Perfoma 5400/120 16/1.6GB/CD	\$1500
SE 4/40	\$200	Centris 650 8/230/CD	\$600	Perfoma 5400/160 16/1.6GB/CD	\$1600
SE 30 5/40	\$350	Centris 650 20/230/CD	\$700	Perfoma 5400 16/1.8GB/CD DOS	\$1700
SE 30 8/80	\$400	Mac Portable 2/40	\$100	Power Mac 6100/60 8/350	\$1100
Classic 4/40	\$300	Qudra 605 8/250	\$500	Power Mac 6100/66 16/350/CD DOS	\$1400
Classic 4/80	\$350	Qudra 610 8/160	\$550	Power Mac 6200/75 8/500	\$1100
Classic II 4/40	\$350	Qudra 610 8/250/CD	\$600	Power Mac 6200/75 8/500/CD	\$1200
Classic II 4/80	\$400	Qudra 650 8/230/CD	\$700	Power Mac 6200 8/800/CD	\$1200
Colour Classic 4/40	\$440	Qudra 660AV 8/230/CD	\$800	14.4 modem 14" AV display	\$1600
LC 4/40	\$150	Qudra 840AV 16/500/CD	\$1000	Power Mac 6200TV 8/800/CD	
LC II 4/40	\$200	Qudra 700 8/230	\$500	28.8 modem 14" AV display	\$1800
LC III 5/80	\$300	Qudra 900 8/160	\$600	Perfoma 6300 8/1.2GB/CD	\$1500
LC475 8/250	\$450	Qudra 950 8/230	\$700	Power Mac 6300/120 16/1.2GB/CD	\$1300
LC520 4/80/CD	\$500	Qudra 950 20/500	\$850	Perfoma 6400/180 16/1.6GB/CD	\$2000
LC575 8/250/CD	\$750	Qudra 800 8/230	\$700	Perfoma Directors Edition	\$2200
LC630 8/500 (no FPU)	\$400	Qudra 800 20/500/CD	\$820	Power Mac 7100/66AV 16/500	\$1000
LC630 8/350/CD (with FPU)	\$500	Perfoma 250	\$440	Power Mac 7100/80 16/700	\$1100
LC630 12/500 DOS	\$600	Perfoma 580 8/250	\$800	Power Mac 7200/75 8/500/CD	\$1500
Mac II 5/40	\$50	Perfoma 580 8/800/CD	\$1000	Power Mac 7200/120 8/1.2GB/CD	\$1400
Mac IIx 5/80	\$150	Perfoma 5200TV 16/800/CD	\$1000	Power Mac 7200/120 8/1.2GB/CD DOS	\$1600
Mac IIcx 5/80	\$300	28.8 modem	\$1100	Power Mac 7200/120 16/1.2GB/CD	\$1500
Mac IIsl 5/80	\$300	Perfoma 5200 12/800/CD 14.4 modem	\$1300	Power Mac 7200/120 24/1.2GB/CD	\$1600
Mac IIci 5/80	\$350	Perfoma 5200TV 12/800/CD 14.4 modem	\$1600	Power Mac 7300/180 16/2GB/CD	\$1600
Mac IIfx 8/80	\$300	Perfoma 5260/75 12/800/CD	\$1500	Power Mac 7300/200 16/32/2GB/CD DOS\$3800	
Mac IIvi 5/80	\$250	Perfoma 5260/120 16/1.2GB/CD	\$1300	Power Mac 7500/132 16/1.2GB/CD	\$1800
Mac IIvx 8/80	\$450	28.8 modem	\$1300	Power Mac 7600/132 16/1.2GB/CD	\$2000
Mac IIvx 8/230/CD	\$600	Perfoma 5260TV/120 16/1.2GB/CD	\$1200	Power Mac 8100/80 16/500	\$1200

Finder

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Display system	Software / other
built-in 15" monitor; 2MB VRAM	Mac OS 8.1; Apple Premium Software bundle*; ATI 3D Rage II accelerator; 12x CD-ROM, keyboard/mouse.
built-in 15" monitor; 2MB VRAM	Mac OS 8.1; Apple Premium Software bundle*; modem; video-in; ATI 3D Rage II accelerator; 12x CD-ROM, keyboard/mouse.
built-in 15" monitor; 2MB VRAM	Mac OS 8.1; ATI Rage IIc 2D/3D accelerator; 2x USB; 10/100BaseT Ethernet; infrared; 33.6Kbps modem; 24x CD-ROM; keyboard/mouse; software bundle\$.
2MB VRAM (SGRAM), upgradable to 6MB	Mac OS 8.1; 24x CD-ROM; Fast SCSI; ATI 3D Rage II accelerator; three PCI slots; 10BaseT Ethernet; keyboard/mouse.
2MB VRAM (SGRAM), upgradable to 6MB	Mac OS 8.1; Zip drive; 24x CD-ROM; Fast SCSI; ATI 3D Rage II accelerator; three PCI slots; 10BaseT Ethernet; keyboard/mouse.
2MB VRAM (SGRAM), upgradable to 6MB	Mac OS 8.1; Zip drive; AV connectors; 24x CD-ROM; three PCI slots; ATI 3D Rage II accelerator; 10BaseT Ethernet; keyboard/mouse.
2MB VRAM (SGRAM), upgradable to 6MB	Mac OS 8.1; Zip drive; video-in; 24x CD-ROM; three PCI slots; ATI 3D Rage II accelerator; 10BaseT Ethernet; keyboard/mouse.
2MB VRAM	US system software (Mac OS 8.1); AppleShareIP 5; video-in; 4x CD-ROM; Ethernet; three PCI slots; keyboard/mouse.
2MB VRAM (SGRAM), upgradable to 6MB	US system software (Mac OS 8.1); G3 server software†; Zip drive; 24x CD-ROM; three PCI slots; 10/100BaseT Ethernet; keyboard/mouse.
4MB VRAM on PCI card	US system software (Mac OS 8.1); AppleShareIP 5.02; 12x CD-ROM; six PCI slots (four vacant); Fast and 2x Ultra/Wide SCSI; keyboard/mouse.
4MB VRAM on PCI card	US system software (Mac OS 8.1); AppleShareIP 5.02; 12x CD-ROM; six PCI slots (four vacant); Fast and 2x Ultra/Wide SCSI; keyboard/mouse.
11.3" dual-scan passive-matrix display	PowerBook software‡; 6x CD-ROM; floppy; infrared; PC Card slots and expansion bay.
11.3" active-matrix display	PowerBook software‡; 6x CD-ROM; floppy; infrared; PC Card slots and expansion bay.
12.1" active-matrix display (1MB VRAM)	Mac OS 8.1; 20x CD-ROM; floppy; 10BaseT Ethernet; infrared; 2 expansion slots; PC Card slots.
12.1" passive-matrix display (2MB VRAM)	Mac OS 8.1; 20x CD-ROM; 10BaseT Ethernet; infrared; 2 expansion slots; PC Card slots.
13.3" active-matrix display (2MB VRAM)	Mac OS 8.1; 20x CD-ROM; floppy; S-video out; 10BaseT Ethernet; infrared; 2 expansion slots; PC Card slots.
14.1" active-matrix display (2MB VRAM)	Mac OS 8.1; 20x CD-ROM; floppy; S-video out; 10BaseT Ethernet; infrared; 2 expansion slots; PC Card slots.

† AppleShareIP 5.0.2 (unlimited user license); ANAT (10-client license); SoftRAID 2.02; Virex.

‡ Mac OS 8.1; ClarisWorks Office; Claris Organizer; Apple Internet Connection Kit; Macintosh PC Exchange; Macintosh Easy Open; MacLinkPlus.

\$ To consist of FileMaker Pro, AppleWorks, Microsoft Internet Explorer, and a games and education pack that is yet to be announced. (Product ships August.)

sales tax. Umax systems are distributed by Computer Enterprises of Australia. Contact the CEA office in your region for your nearest dealer (ACT/most NSW: 02 9807 5222. Vic/Tas: 03 9510 9040. WA/NT: 08 9535 3411. SA: 08 8361 3222. QLD/northern NSW: 07 3844 3711).

Display system	Software/ other
1MB VRAM (on-board)	Mac OS 7.6; 8x CD-ROM; three PCI slots; keyboard/mouse.
4MB VRAM	Mac OS 8; 12x CD-ROM; three PCI slots; keyboard/mouse.
no video card	Mac OS 8; 24x CD-ROM; six PCI slots; 10BaseT Ethernet; keyboard/mouse.
2MB VRAM on Matrox Millennium video card	Mac OS 8; 8x CD-ROM; six PCI slots; 10BaseT Ethernet; keyboard/mouse.
2MB VRAM on Matrox Millennium video card	Mac OS 8; 8x CD-ROM; six PCI slots; 10BaseT Ethernet; keyboard/mouse.
4MB VRAM on 128-bit IMS video card	Mac OS 8; 8x CD-ROM; six PCI slots; 10BaseT Ethernet; keyboard/mouse.
4MB VRAM on 128-bit IMS video card	Mac OS 8; 8x CD-ROM; six PCI slots; 10BaseT Ethernet; keyboard/mouse.
4MB VRAM on 128-bit IMS video card	Mac OS 8; 8x CD-ROM; six PCI slots; 10BaseT Ethernet; keyboard/mouse.
4MB VRAM on 128-bit IMS video card	Mac OS 8; 12x CD-ROM; six PCI slots; 10BaseT Ethernet; keyboard/mouse.
8MB VRAM on 128-bit IMS video card	Mac OS 8; 12x CD-ROM; six PCI slots; 10BaseT Ethernet; keyboard/mouse.
8MB VRAM on 128-bit IMS video card	Mac OS 8; 12x CD-ROM; six PCI slots; 10BaseT Ethernet; keyboard/mouse.
4MB VRAM on 128-bit IMS video card	Mac OS 8; 24x CD-ROM; six PCI slots; 2x Fast SCSI II; 10BaseT Ethernet; keyboard/mouse.
8MB VRAM on 128-bit IMS video card	Mac OS 8; 24x CD-ROM; six PCI slots; 2x Fast SCSI II; 10BaseT Ethernet; keyboard/mouse.
8MB VRAM on 128-bit IMS video card	Mac OS 8; 24x CD-ROM; six PCI slots; 2x Fast SCSI II; 10BaseT Ethernet; keyboard/mouse.
8MB VRAM on 128-bit IMS video card	Mac OS 8; 24x CD-ROM; six PCI slots; 2x Fast SCSI II; 10BaseT Ethernet; keyboard/mouse.

ViewSonic 21 (\$3116). Add Mac video adaptor (\$42) to use ViewSonic monitor with Apus system.

Mac Rent is one of the largest secondhand Mac dealers in Australia, and can be reached in Vic on 03 9699 3999, the ACT on 02 6280 4470, QLD on 07 3367 3397, and NSW on 02 9906 6888.

Power Mac 8100/80AV 16/1GB/CD	\$1300	PowerBook 5300/100cs 16/750	\$1800	Power Mac G3 Minitower 266		Apple Multiscan 1710AV Trinitron	\$1300
Power Mac 8100/100 16/1GB	\$1500	PowerBook 5300/100ce 32/1.1GB 2	\$8.8 modem	32/6GB/CD Zip video-in	\$4500	AppleVision 850	\$3000
Power Mac 8100/110 20/1GB	\$1600		\$2000	PowerBook 1400cs/117 12/750	\$2500	20" Multiscan (Trinitron)	\$2500
Power Mac 8500/120 16/1G	\$2700	PowerBook 5300/100c 16/750	\$2500	PowerBook 1400c/133 16/1GB/CD	\$3000	21" mono	\$600
Power Mac 8500/180 32/2GB/CD	\$3000	Duo 210 4/80 A/C & floppy	\$300	PowerBook 1400c/166 16/2GB/CD	\$3500	21" colour	\$1300
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Power Mac 8600/250 32/4GB/CD L2 Zip	\$3500	Duo 250 4/200 A/C & floppy	\$600	PowerBook 3400c/240 16/3GB/CD	\$5000	Printers	
Power Mac 9500/120 16/1GB/CD	\$2800	Duo 270c 12/240 A/C & floppy	\$900	PowerBook G3 32/5GB/CD Ethernet	\$8800	imageWriter II	\$295
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Power Mac 9500/180MP 32/2GB/CD	\$4500	Duo 2300 8/750	\$1200			StyleWriter II	\$300
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PowerBook 140 4/40	\$350	Power Mac 5500/225 16/2GB/CD	\$2400	MessagePad Classic	\$100	Color StyleWriter 2500 with LocalTalk	\$550
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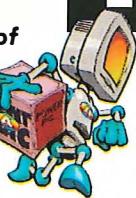
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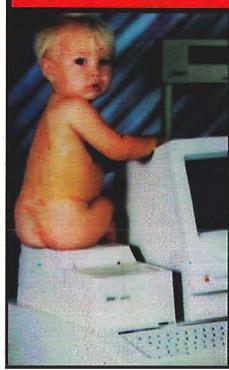
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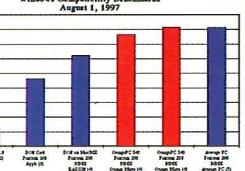
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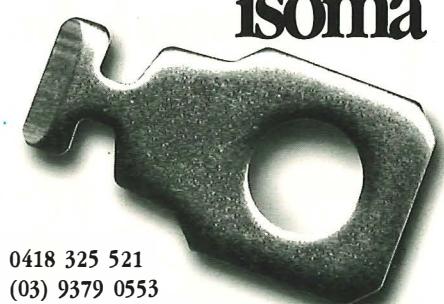
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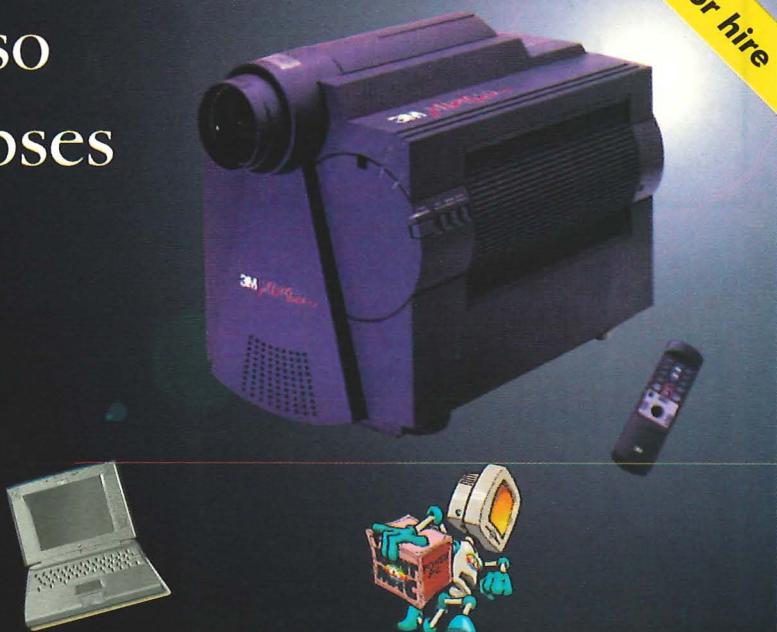
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